the UniSetter

Applications Manual

compugraphic
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TABLE OF CONTENTS

Foreword 1
Introduction 3
Typesetting With Perforated Tape . . . . . 4 — 7
TTS Single Frame Function Codes . . . . . 8 — 15
Multiple Code Keyboards . . . . . 16 — 17
Em Precendence Codes . . . . . 16 — 17
UniSetter Operation . . . . . 18 — 25
Photographic Material . . . . . 26 — 27
Control Panel . . . . . 28 — 32
Indicators . . . . . 32 — 33
Processing Tape Data . . . . . 34 — 35
Markup of Exercises . . . . . 36 — 37
Line Space . . . . . 38 — 39
Keyboard Tape Operation . . . . . 40 — 49
Cancel Functions . . . . . 50 — 51
Interword Space Control . . . . . 58 — 61
Set Leading (Preset Line Space) . . . . . 68 — 69
Space Codes (Proportional Space) . . . . . 74 — 87
Variable Character Compensation . . . . . 88 — 89
Optional Line Space . . . . . 96 — 111
Tabbing (Multiple Columns) . . . . . 120 — 127
Automatic Tab . . . . . 128 — 139
Automatic Indent and Run-a-round Program . . . . . 140 — 143
Formats . . . . . 144 — 159
Wire Service . . . . . 160 — 161
Super Shift Functions . . . . . 162 — 167
Keyboard Layouts . . . . . 168 — 172
Index . . . . . 173 — 174

FOREWORD

The purpose of the Applications Manual is to show the functions pertaining to the phototypesetter. Although the functions relate to those standards presently used in the Graphic Arts, this manual should not be construed as to being lessons in printing. The selection of type styles for exercises illustrated in the manual, can be any of the available styles on the phototypesetter. It is recommended that the section on tape operation be reviewed before operation of the system.

INTRODUCTION

The UniSetter, a high speed tape-operated phototypesetter, provides applications for unlimited typographic mixing of sizes and styles. Reading 6-level Teletypesetter (TTS) tape, the system processes justified or unjustified tape to a maximum speed of 80 lines per minute. Included in UniSetter's hard-wired programs are applications for Wire Service operation, Indents and Run-a-Rounds, Ragged Right, Reverse Leading, Tabbing and Formats.

Two film strips, with four type styles each, and twelve lenses for point sizes, access a total of 96 fonts of type. Film strips contain 118 characters in each type style. Four film strip arrangements are available for setting Display, Text, News and Multilingual composition.

The insertion of all functions (measure, style, size, line space, etc.), are all accomplished under tape control. The optional format controller stores 32 data codes in each of 16 available formats. A unique tabbing feature automatically selects eight variable tab measures for complete typographic formation.

The phototypesetter, normally accessed by 6-level tape can also be operated as a system when directly on-line to Compugraphic's Unified Composer or UniTerm processing and editing terminals.

The photypesetter, working like a camera, consists of a light projection system; negative film strips containing the alphabet, numeric and miscellaneous characters; a holder for photographic material and point size lenses. The characters are photographed with an instantaneous flash of light, passing through the lens and exposed on the photographic material.

The characters are retained in the system's memory, line by line. Activation by the Return code causes the character images to be flashed and photographed onto the photographic material. As each line is ended, the material is automatically advanced in preparation for the next line.

After completion of the typesetting operation, the exposed photographic material is processed. This process is similar to the development of film from a camera. The completed copy is pasted onto a form from which a negative is made and final steps taken for printing.

TYPESETTING WITH PERFORATED TAPE

A large percentage of graphic arts typesetting is presently achieved by utilizing perforated tape. Tape operation permits the use of basic typewriter-like keyboards, eliminating special keyboard skills for the setting of type composition. The speed of the typesetter is another reason, and a prime factor for the use of perforated tape. Typesetter speeds are now in excess of hundreds of lines per minute, depending on the system. The use of tape allows for multiple input on the phototypesetter via economical, standard typewriter tape-punching keyboards.

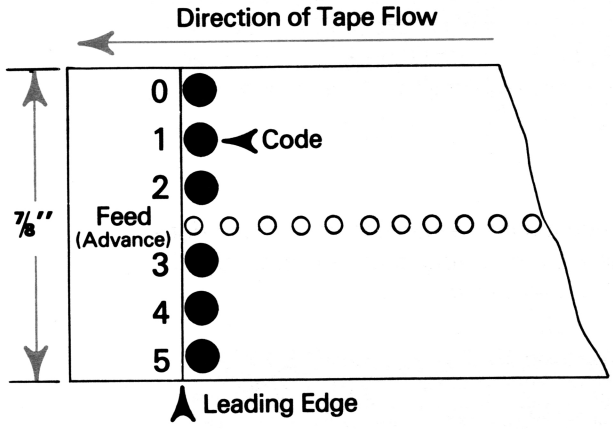
The basic difference between direct typewriter entry to a typesetting system and the use of perforated tape is the method of communicating to the typesetter. When directly inputting from a keyboard, characters are briefly stored into the typesetter's memory. With the completion of each line of data, the line is typeset by the photocomposer. In tape operation, typeset data is punched (stored) on the tape, via tape codes. The tape is then run through a tape reader on the typesetter, activating those same functions as were obtained through the direct keyboard. Advantages of tape operation is that tape can be rerun as often as needed, stored, updated and corrected. It also provides additional input to the phototypesetter.

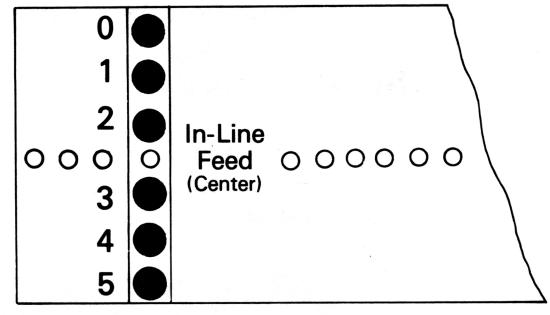
One of the most widely used tape code systems to drive the typesetter is called 6-level Teletypesetter or "TTS". Originally designed for Wire Service operation with linecasting machines, TTS coding is used for input to many phototypesetting systems. The code structure consists of 64 unique perforated code hole combinations. A Shift code selects an upper case mode, thereby doubling the available functions from the 64 codes to 128. The code structure, punched horizontally across the tape, can be/or not be, any of 6 possible code holes across the width of the tape, which is 7/8" wide. Each of the six possible positions that can be punched are called "bits". The complete row of bits across the width of tape is designated by channel numbers from 0 to 5, with each row across the tape called a frame. To reiterate, a code is one frame of tape represented by a hole or no hole (bits) in one row across the tape. The six positions across are numbered as channels 0 to 5, and the tape is called 6-channel tape.

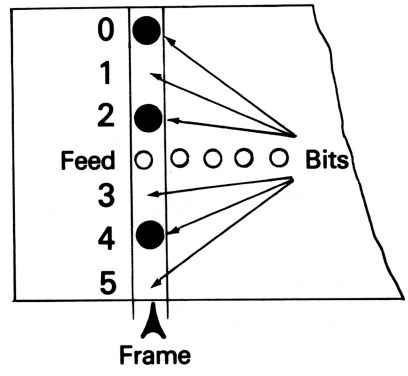
As each code hole is punched, a small tape feed sprocket hole between the first three channels (bits 0, 1, 2) and the second three channels (bits 3, 4, 5) is also perforated. The sprocket feed hole is used to advance (move) the tape to the next code row (frame). The feed holes are designated as advance or in-line feed holes. The advance feed hole is so-called when the feed hole is top-aligned horizontally across the width of the tape with the code hole. The advance feed sprocket hole is used to indicate the leading edge and the direction of tape flow.

SHIFT / UNSHIFT	Tape Feed	T / t	Return	O / o	Space Band	N / n	H / h	M / m	Elevate	I / i	R / r	C / c	L / l	P / p	G / g	V / v	E / e	A / a	S / s	U / u	D / d	J / j	F / f	K / k	Z / z	W / w	Y / y	Q / q	B / b	Shift	X / x
0																															
1																	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2									●	●	●	●	●	●	●	●		●		●		●		●		●		●		●	
FEED	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
3					●	●	●	●		●		●		●		●			●	●			●	●			●	●			●
4			●	●		●		●			●	●			●	●					●	●	●	●					●	●	●
5		●		●			●	●					●	●	●	●									●	●	●	●	●	●	●

SHIFT / UNSHIFT	Unshift	Thin Space	⅜ / 3	P.F. or L.M.	! / $	Add Thin Space	Em Space	— / 8	⅞ / 7	⌄ / ^	Hyphen	½ / 4	Bell	Comma	Quad Left	En Space	Q.R. or U.M.	⅝ / 5	(/)	Em Space	¼ / 2	Em Leader	¾ / 6	? / 0	En Leader	& / 9	Upper Rail	: / ;	Lower Rail	Period	⅛ / 1	Insert Space	Rubout
0		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1	●		●		●		●		●		●		●		●		●		●		●		●		●		●		●		●		●
2	●			●	●			●	●			●	●			●	●			●	●			●	●			●	●			●	●
FEED	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
3	●					●	●	●	●					●	●	●	●					●	●	●	●					●	●	●	●
4	●									●	●	●	●	●	●	●	●									●	●	●	●	●	●	●	●
5	●																	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●







Each code represents an alpha character, numeral, punctuation, space or function. A Shift or Unshift code is used for the selection of upper or lower case alphanumeric characters, i.e., a Shift code followed by the code for an "a" would access the upper case (capital) "A", and all subsequent characters would be in upper case. If followed by the Unshift code, subsequent alpha characters accessed would be in lower case. Where an upper case character does not exist, such as a code for upper case numeral, other characters are substituted and accessed with the Shift code.

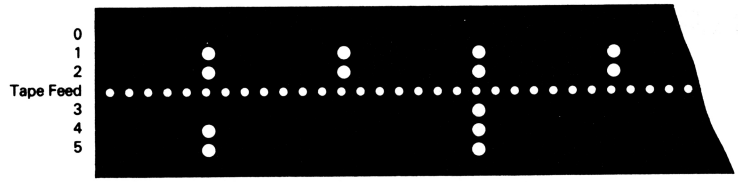
It should be noted that the alpha, shift and unshift codes do not use the channel zero (0). When the zero channel is punched, the code would represent a numeral, punctuation, space or function. When viewing a punched tape, the top side can be identified by the lack of zero codes for alpha characters, thereby aiding the determination of tape flow.

Unjustified Tape

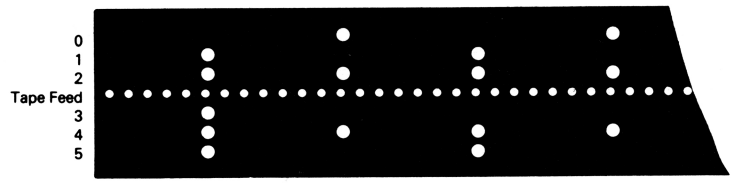
Tape is considered to be unjustified when line-ending decisions are to be made by a computer or the phototypesetter. The typeset composition is automatically justified, that is, set in uniform line lengths (margin to margin) of the selected line measure. Unjustified tape is normally used in typesetting text for newspapers, books and other publishing data.

Justified Tape

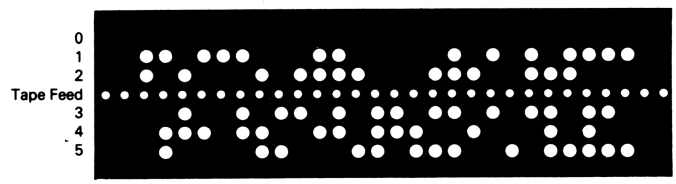
Punched tape is considered to be justified when line ending decisions for typeset copy are determined by counting and activated by the operator. The Return code is used for all line endings.



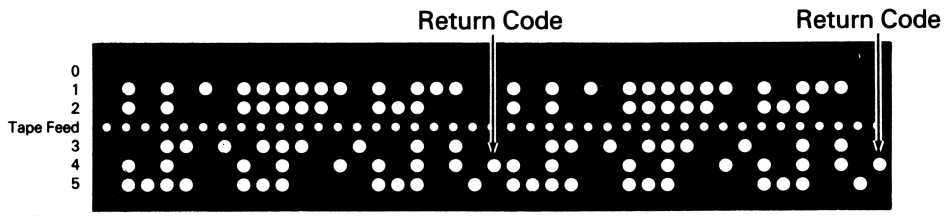
Shift A Unshift a



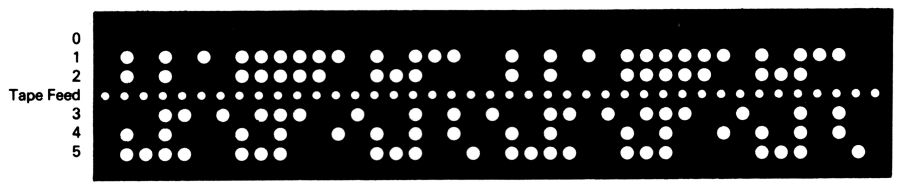
Unshift 4 Shift ½



abcdefghijklmnopqrstuvwxyz



Justified



Unjustified

TTS SINGLE FRAME FUNCTION CODES

Shift

The Shift code is a command code used to access all subsequent codes in an upper case (capital) mode. The upper case condition remains in effect until changed by the Unshift code.

Unshift

The Unshift code is a command code used to access all subsequent codes in a lower case mode. The lower case condition remains in effect until changed by a Shift code.

Return

The Return code is used for **all line endings**.

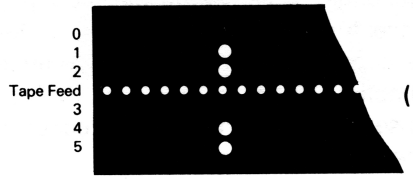
The Return code generates activation of the photographing of the typeset line. After completion, the photographic material will be automatically advanced (leading), allowing space for a new line. The Return code is also combined with other line ending codes for the positioning of typeset copy on the left, center or right margins of the selected line measure. When not combined with other line ending codes, the Return code acts as a justifying function, justifying the typeset line to the line measure.

Space Band

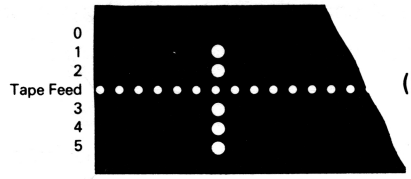
The Space Band (Space Bar) code is used for the insertion of interword space in typeset lines. In justified lines, the interword space for each line will be of varying values due to the difference in the number of characters per line. This excess space is equally divided between words for justification of the lines. When typeset lines are positioned left, center, or right on the measure, the interword space will be a minimum value as selected on the phototypesetter.

Quad Center (Insert Space)

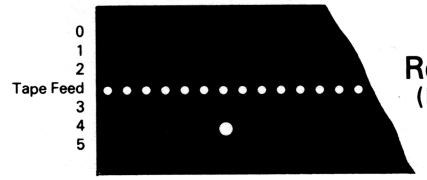
Originally used to center lines on a linecasting machine, the Quad Center code is now used for the insertion of blank space, filling the line with space, where inserted. It can be inserted without limitation and is used to position the type.



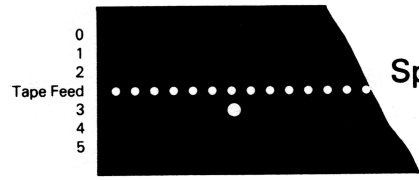
Shift
(Bits 1245)



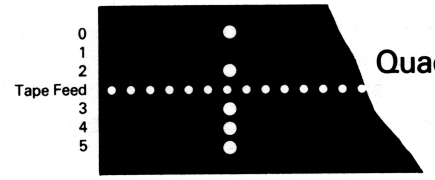
Unshift
(Bits 12345)



Return
(Bit 4)



Space Band
(Bit 3)



Quad Center (Insert Space)
(Bits 02345)

Elevate

The Elevate code, originally activating line endings for the linecaster, is now used as a Cancel function, for corrections. In the lower case condition, the Elevate code is a cancel word command, cancelling all characters and functions back to, but not including, the interword space. It can be inserted without limitation, recognizing and cancelling the interword space as an individual word.

In the Upper Case condition, the Elevate code is a Cancel Line command, cancelling all characters and functions back to the previous return code or automatic line ending (as determined by the phototypesetter).

Rubout

The Rubout code is used for the correction of individual characters or function codes. It is activated by reversing the tape to the erroneous code, over-striking and punching all 6 bits of the frame. When the tape is read, the Rubout code will be ignored by the phototypesetter.

Lower Rail

The Lower Rail code is used with Wire Service operation. The rail code command generates the selection of the Roman style, normally located in the first position of the master film strip on the phototypesetter.

Upper Rail

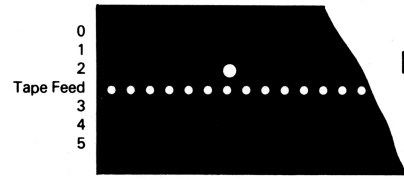
The Upper Rail code, used with Wire Service operation, generates the selection of the italic type style, normally located in the second position of the master film strip on the phototypesetter.

Upper Magazine

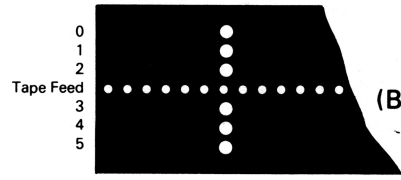
The Upper Magazine code is a function code formerly used for the selection of a magazine on a linecaster for type styles. Presently used with Wire Service operation, when combined with a rail code, it generates the selection of the bold style used for catch lines.

Lower Magazine (Paper Feed)

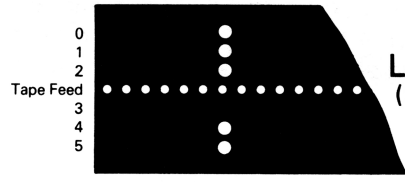
A function code formerly used for selection of type styles on a linecaster, the Lower Magazine code is used for paper feed in Wire Service operation. Combined with lower or upper rail codes, it restores the phototypesetter to the roman or italic type styles after selection of Upper Magazine for the bold type style.



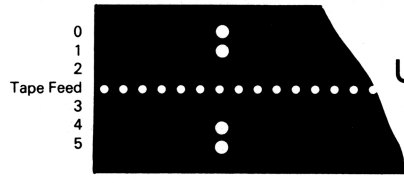
Elevate
(Bit 2)



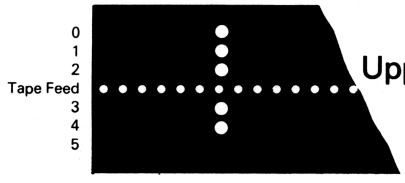
Rubout
(Bits 012345)



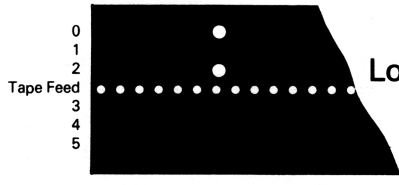
Lower Rail
(Bits 01245)



Upper Rail
(Bits 0145)



Upper Magazine (Quad Right)
(Bits 01234)



Lower Magazine (Paper Feed)
(Bits 02)

Em Leader

The Em Leader code accesses the Em Leader character for the linecasting machine. On the phototypesetter, it is used to access additional characters and/or the leader image when provided on the master film strip. (The availability of additional characters is made possible by substituting the period as a leader image. The leader line is inserted with an Insert Leader function.)

En Leader

The En Leader code accesses the En Leader character for the linecasting machine. It is used on the phototypesetter to access additional characters, in place of the En Leader. (See Em Leader.)

Em Space (Bits 013)

The 013 Em Space code generates a fixed space, relative to the point size, i.e. a space equal to the square or set width of the selected point size. It is used for paragraph indentions and alignment of type columns.

Em Space (Bits 025)

Formerly used as an additional space for linecasting machines, the 025 Em Space is used as a flag code to access additional characters from the master film strip on the phototypesetter. (See Em Precedence codes.)

En Space

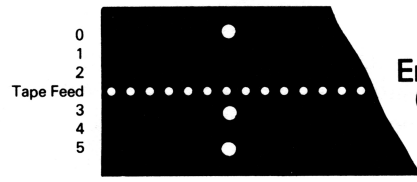
A fixed space, relative to the point size, the En space is half the value of the Em space or equal to the value of the numerals. It is referred to as a figure space. It is used for indentions and alignment of columns when setting figures in tabular composition.

Thin Space

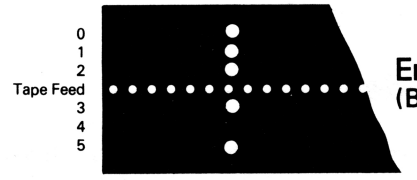
A fixed space, relative to the point size, the Thin Space is one-third the value of the Em space. It is also the value of the period and comma. It is used for indentions or when the value of the period or comma must be equaled for alignment of type.

Tape Feed

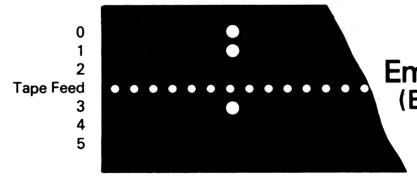
The Tape Feed code is a sprocket hole automatically punched within each frame of tape. Centered on the width of the tape, between bits 0, 1, 2 and 3, 4, 5, it advances the tape on the reader to the next code frame. It is also used as a Discretionary Hyphen in justified line endings.



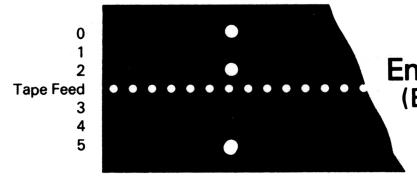
Em Leader
(Bits 035)



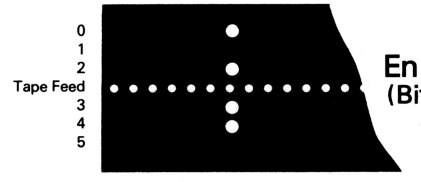
En Leader
(Bits 01235)



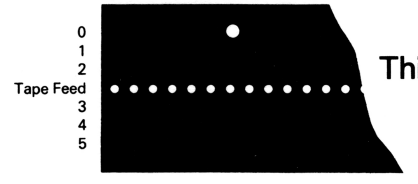
Em Space
(Bits 013)



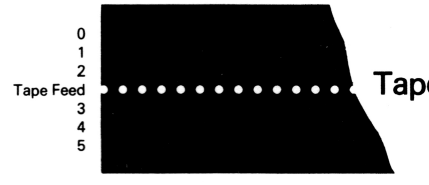
Em Space
(Bits 025)



En Space
(Bits 0234)



Thin Space
(Bit 0)



Tape Feed

Bell Code

The Bell Code is simply used as a Stop code. When the code is sensed on the tape reader, both input of tape and operation of the phototypesetter will be stopped. All tape codes entered into the system prior to the Stop code will continue to be processed. It is also used in conjunction with the Em Precedence code for accessing additional characters (See Em Precedence codes, page 16).

Em Precedence Codes

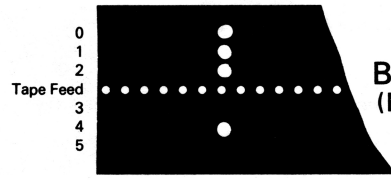
TTS code structure is limited to 64 code combinations, with 45 of these codes allocated to alphanumeric character selection. Since the master filmstrip on the phototypesetter has many more characters (boxes, rules, bullets, etc.) than code combinations available, a special code combination (flag code) must be used to access the additional characters. The flag code, an 025 Em Space, is used in conjunction with another code, thereby using two codes within two frames to access an individual character. It is referred to as an Em Precedence code.

Quad Left

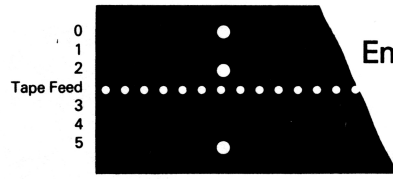
When combined with a Return code, the Quad Left code is a command to position typeset copy on the left margin of the selected line measure. The Quad Left function is used for paragraph line endings.

Add Thin (Super Shift)

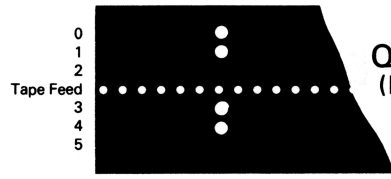
A space code formerly used on a linecasting machine for additional space between words, the Add Thin code is a function command on the phototypesetter. Designated "Super Shift", the code, when combined with other TTS codes, instructs the phototypesetter to recognize and activate precise functions related to the system. A second Super Shift immediately following the function codes, acts as a command to restore the system to recognize succeeding codes as alpha numeric characters.



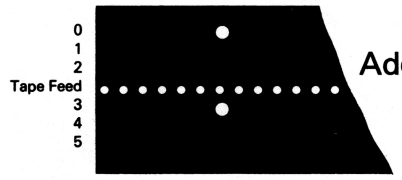
Bell Code
(Bits 0124)



Em Precedence
(Bits 025)



Quad Left
(Bits 0134)



Add Thin (Super Shift)
(Bits 03)

MULTIPLE CODE KEYBOARDS

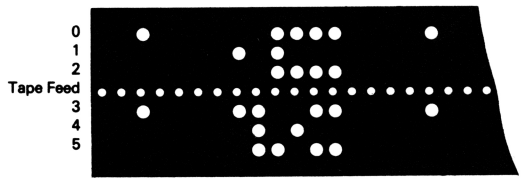
Although the codes used to drive the phototypesetter can be accessed from any keyboard punching 6-level TTS tape, most present-day keyboards punch multiple codes to generate the functions on the phototypesetter. The multiple coding consists of the Super Shift function codes and Em precedence codes for miscellaneous characters. The operator simply types required information for the function as indicated by the "XXXX" in the examples. Multiple code keyboards eliminate errors, also saving operator input time.

Example:

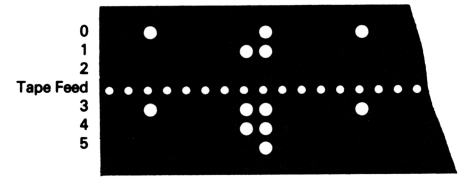
Measure — Super Shift, SMXXXX, Super Shift
Style (Faces 1—8) — Super Shift, FX, Super Shift
Point Size (6 to 72 Point) — Super Shift, PXX, Super Shift
Line Space — Super Shift, SLXXX, Super Shift

EM PRECEDENCE CODES

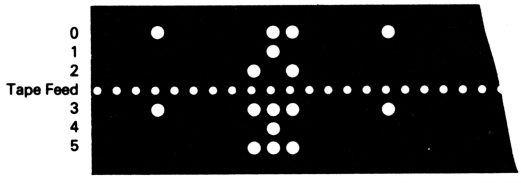
Standard TTS keyboards being limited in flashable character codes makes it necessary to use an accessory code to flash the additional characters on the film strips. The code, 025 Em Space, when combined with other TTS codes in a Shift or Unshift condition, accesses thirty (30) additional character codes. The character is accessed by striking the Em Space (025) followed by the assigned Em Precedence code. Most of the Em Precendence characters are accessed with the Em Precedence code and the figures (numerics, one to zero). See Keyboard Arrangements, pages 168-172.



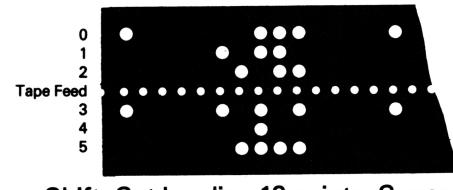
Super Shift, Set Measure 24 Picas, Super Shift



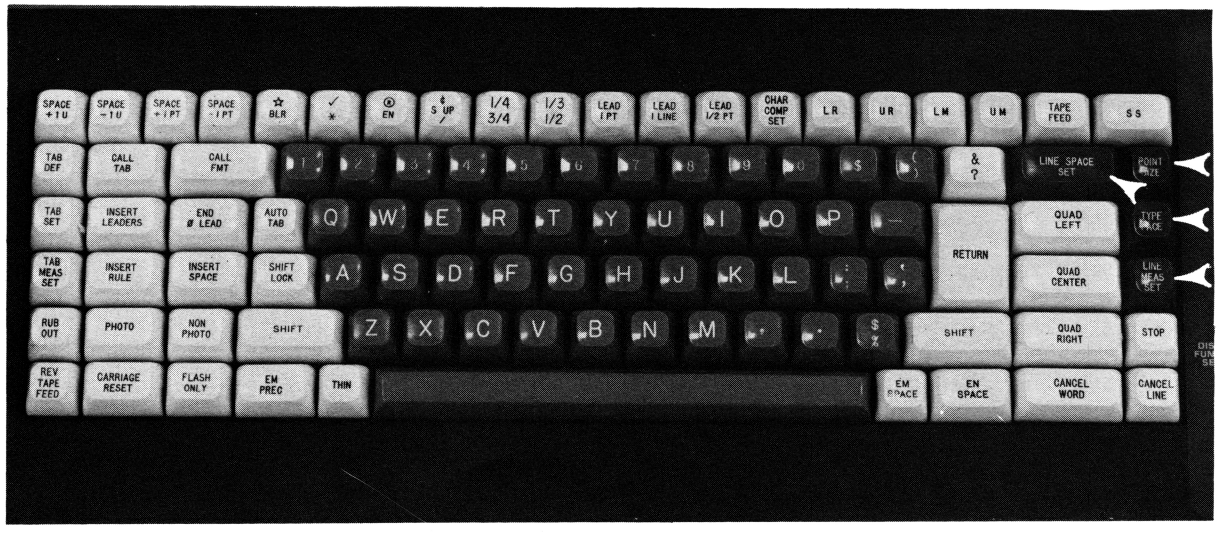
Super Shift, Face 1, Super Shift



Super Shift, Point Size 10, Super Shift



Super Shift, Set Leading 12 points, Super Shift



Multiple Code Keyboard

UNISETTER OPERATION

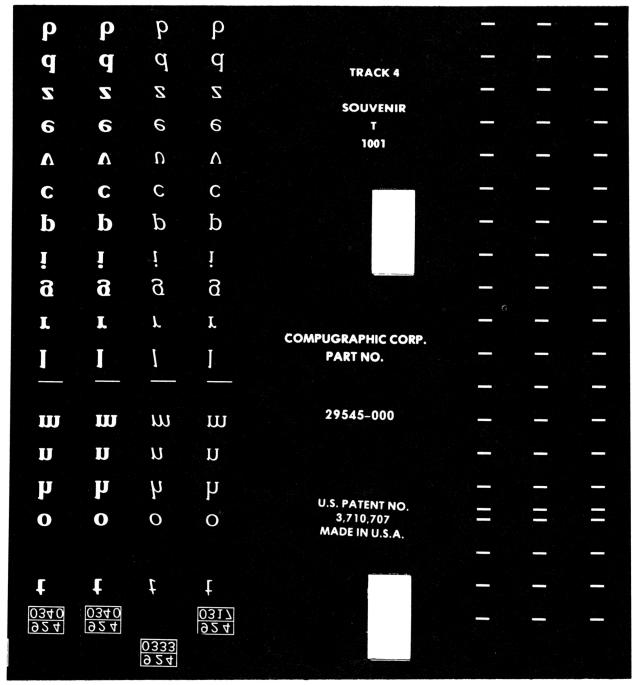
Filmstrips

Two filmstrips, with four type styles each, are mounted on the UniSetter at any one time. The filmstrips, made to standard configurations, have 118 characters in every style. Filmstrips are identified by a part number, the name of type styles and the selected character arrangements. Filmstrip classifications are available for setting display, text, news and multilingual composition. Accompanying every filmstrip is a width card, providing width values for all characters on the filmstrip, compatible with the selected character arrangement.

Filmstrips are mounted on a metal font wheel located in the font compartment of the UniSetter system. Two positions are allocated and shown on the font wheel for the filmstrips. They are designated as face (track) positions 1 to 4, and face (track) positions 5 to 8. When the filmstrips are mounted on the font wheel, the accompanying width card for each strip must be inserted into the system. Two width card slots located in front of the UniSetter are designated Fonts 1 to 4, and Fonts 5 to 8. The width cards are simply inserted into the slots as indicated, corresponding to the filmstrip location on the font wheel.

Font Compartment

When the system's power is turned on, the UniSetter's Font Compartment door has a locking mechanism which prevents access to the font drum unless the font drum motor switch on the Control Panel has been turned off. The locking mechanism, released approximately 20 seconds after the switch is deactivated, allows the font drum to come to a stop. This is a safety factor for the operator when changing filmstrips.


TRACK 4
SOUVENIR
T
1001
COMPUGRAPHIC CORP.
PART NO.
29545-000
U.S. PATENT NO.
3,710,707
MADE IN U.S.A.

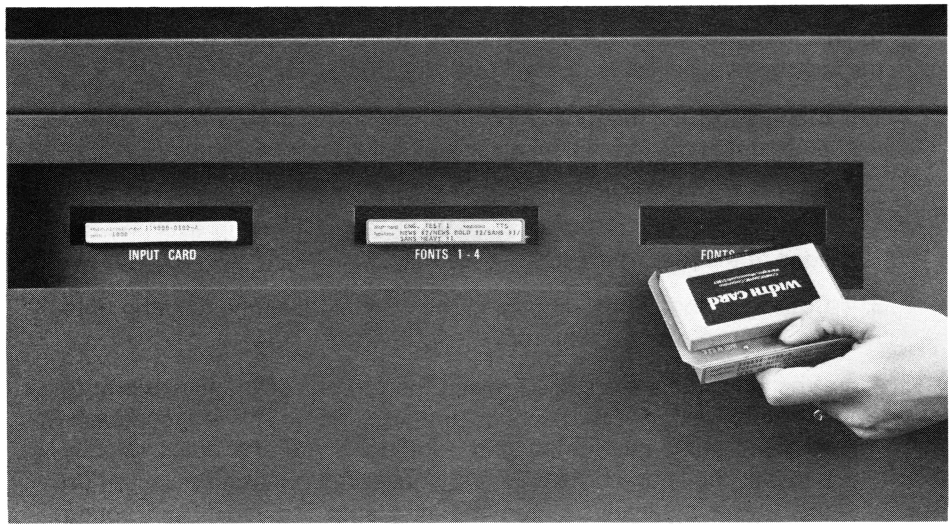
FACES
DRUM
SPEED
HIGH
LOW
FONTS
4 TRACK
6 TRACK

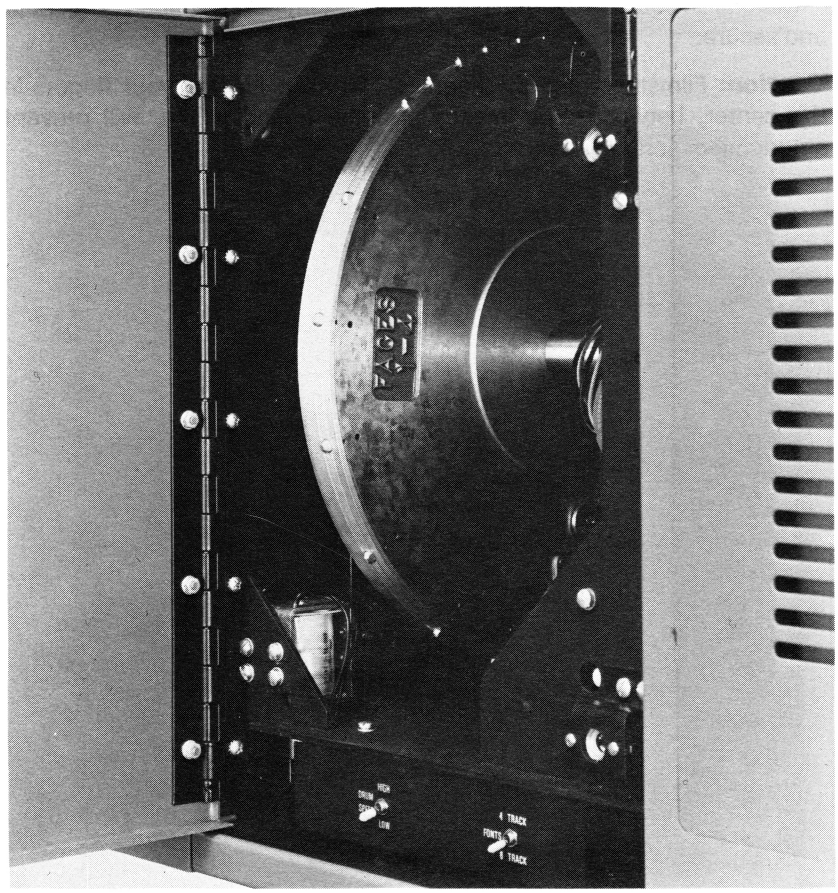
Width Cards

Accompanying every film strip is a width card containing the width values for all characters in the different styles of type. **When type styles are changed, the width card accompanying the film strip must be inserted into the phototypesetter.** Two positions are allocated, designated Fonts 1-4 and Fonts 5-8. These positions correspond to the positions on the Font Wheel, Faces 1-4 and Faces 5-8. The cards are inserted into the corresponding slots on the UniSetter.

Input Card

An input card is a standard feature on each UniSetter system. It coordinates the system to recognize changes in film strip arrangements when the UniSetter is used for international (foreign) operation. It does not have to be changed during domestic operation.


INPUT CARD
FONTS 1-4
width card


HIGH
DRUM
SPEED
LOW
4 TRACK
FONTS
6 TRACK

Installing Filmstrips

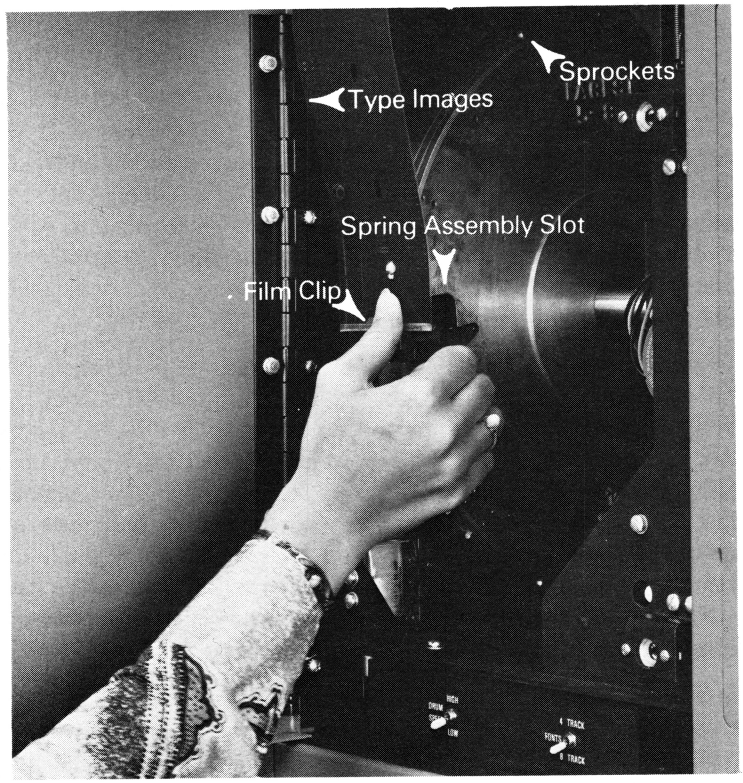
With the release of the font compartment locking mechanism, access to the font wheel is obtained by opening the side door (pressing and turning the two locking knobs will open the door).

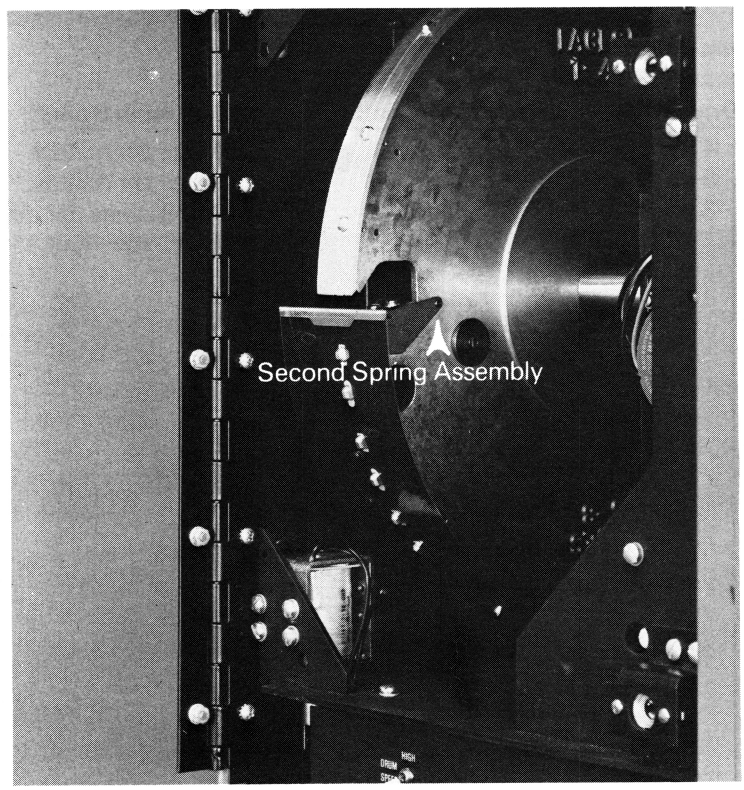
1. Manually rotate the font wheel until the spring assembly slot on the outer rim of the font wheel is accessible for Font position 1-4.
2. Placing the filmstrip in an upright position (type images to the left), slide the film clip on the bottom edge of the filmstrip over the top edge of the font wheel spring assembly.
3. Rotate the font wheel, engaging the open slots on the filmstrip onto the sprockets protruding from the font wheel.
4. When all slots are engaged, place the top clip of the filmstrip onto the bottom edge of the second spring assembly. This is accomplished by placing the thumb and forefinger into the holes directly beneath the spring assembly and squeezing, releasing pressure on the spring assembly. When the film strip is seated, the spring assembly will lock on the filmstrip.

Repeat the procedure for the second filmstrip (Font position 5-8).

Manually rotate the wheel to be sure the filmstrip is properly mounted and secure.

Caution: Filmstrips must be handled carefully. Placing your fingers in the center, between type images and the timing marks, will prevent smudging or scratching of characters on the filmstrip.


Sprockets
Type Images
Spring Assembly Slot
Film Clip


Second Spring Assembly

UniSetter Speed

The UniSetter is a multi-speed system with a maximum speed of 80, 8 point, 11 pica lines per minute. Maximum speed is obtained by duplication of identical type styles in the opposite track position on the companion filmstrip. It is not necessary to duplicate all type styles on the filmstrips for high speed operation. Duplication of type styles for high speed operation reduces the number of styles available from the two filmstrips. If duplicating all styles for high speed operation, type selection would be limited to four faces.

UniSetter speed is controlled by both the speed of the font drum and by the selection of four-track/eight-track operation. The font drum, driven by a high and low speed motor, is controlled by a switch setting in the font compartment. **The high speed position is the normal mode of operation.** The low speed is only used where maximum character fit in large point sizes is required. The selection of **four track operation** causes the system to access characters from both tracks of the identical fonts and is necessary for high speed operation. In **eight track operation** (50 lines per minute), all eight type styles on the filmstrips are available and is normally used for intraline mixing of sizes and styles.

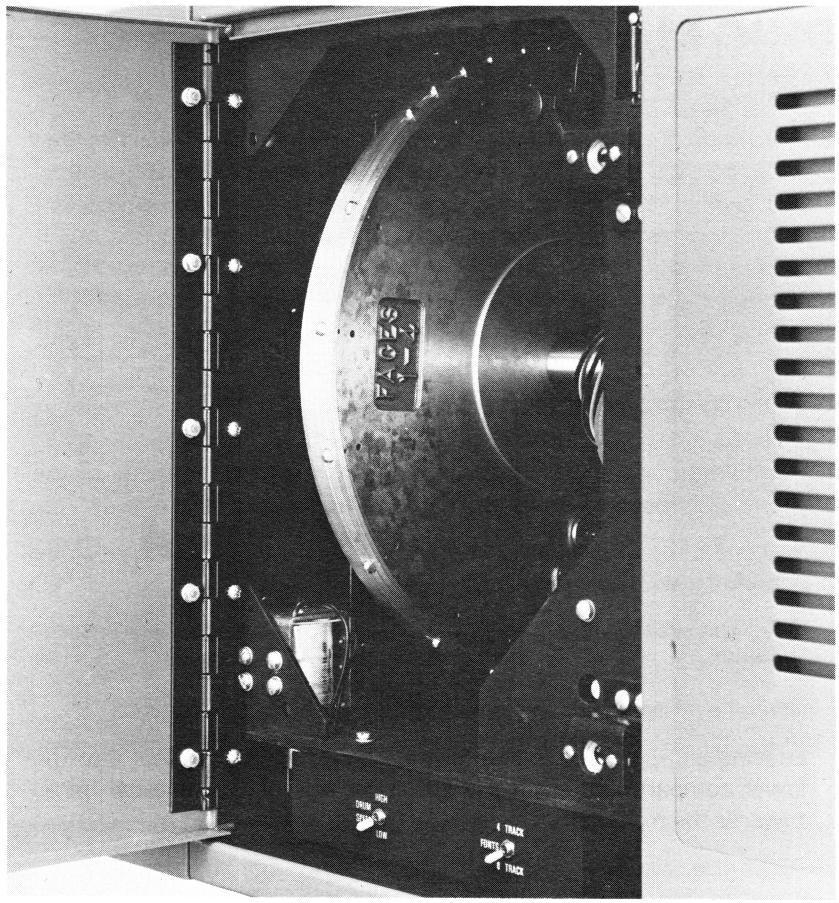
The selection of four-track/eight-track operation can be made by a switch setting in the font compartment or **can be inserted under tape control**. (See Super Shift Functions, page 162-163.)

Speed Modes

Switch Setting 4 Track/8 Track Operation	Drum Speed	Machine Speed
4 track	high	80 lines per minute
8 track	high	50 lines per minute
8 track	high	Mixed 50 or 80 lines per minute **(Tape Control)**

Filmstrips Arrangements

High Speed 80 Lines Per Minute (Duplicate Filmstrips)	High Speed 50 Lines Per Minute	Mixed 50 or 80 Lines Per Minute
Tracks 1-4	**Tracks 1-4**	**Tracks 1-4**
News 2	Futura Medium	News 2
News Bold	Futura Medium Italic	Sans 1
Sans 1	Futura Bold	Futura Medium
Sans Heavy	Futura Bold Condensed	News Gothic Bold Condensed
		High Speed
Tracks 5-8	**Track 5-8**	**Tracks 5-8**
News 2	English	News 2
News Bold	English Italic	Sans 1
Sans 1	English Bold	Futura Bold
Sans Heavy	English Bold Italic	Futura Italic


DRUM
SPEED
HIGH
LOW
FONTS
4 TRACK
8 TRACK

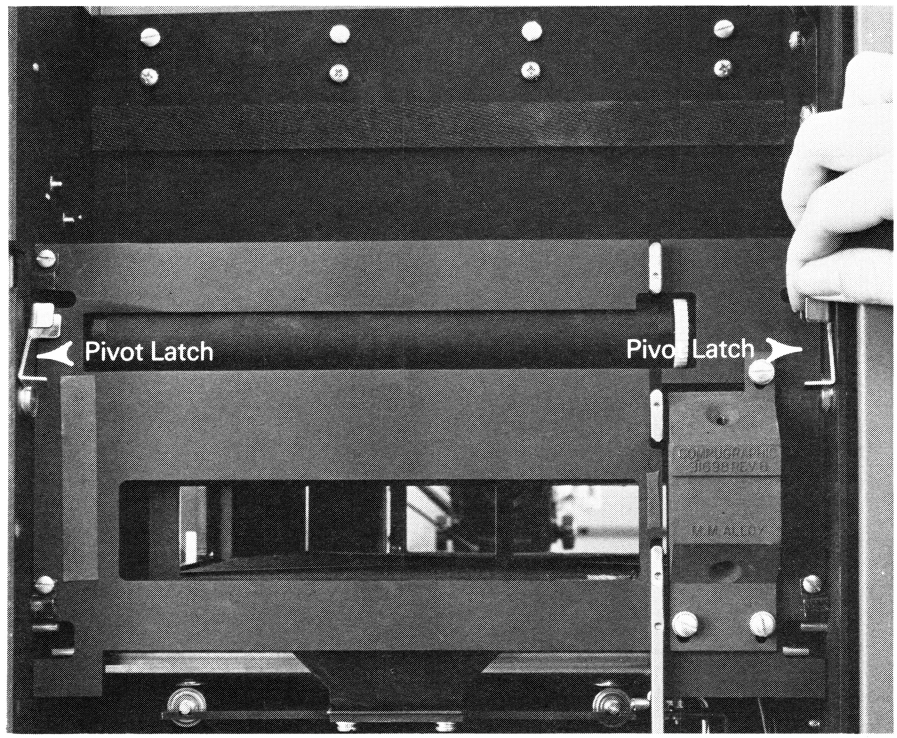
HIGH
DRUM
SPEED
LOW
4 TRACK
FONTS
8 TRACK

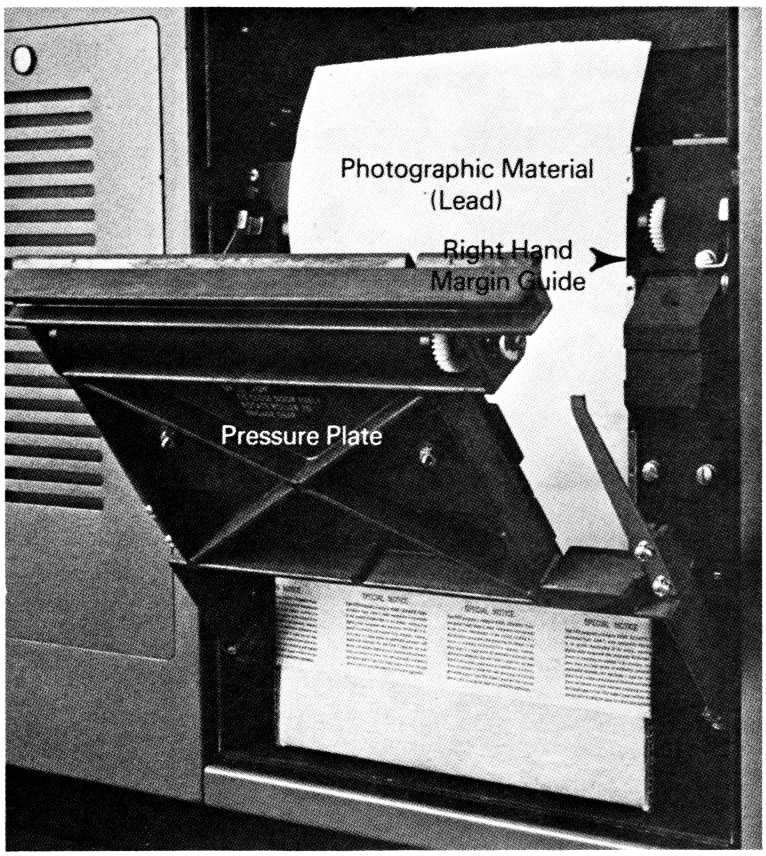
PHOTOGRAPHIC MATERIAL

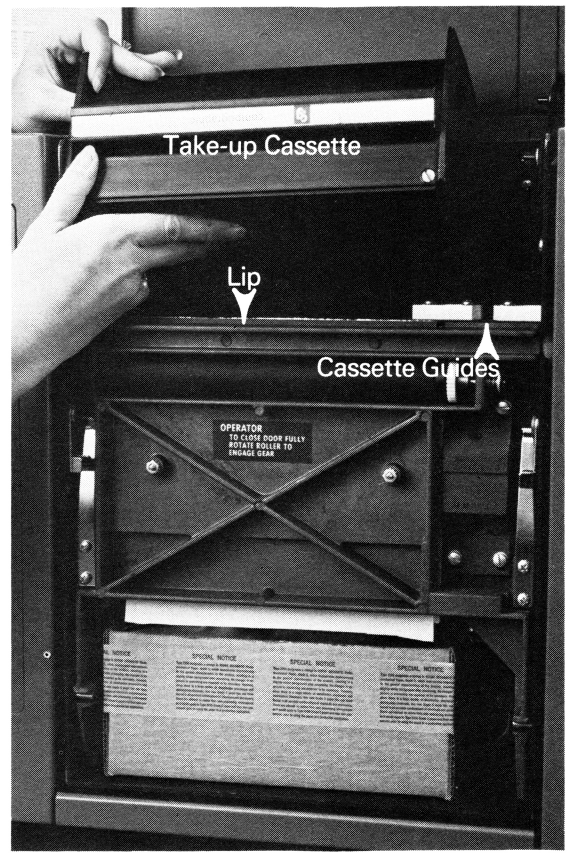
Either Kodak Ektamatic Grade "S" photomechanical or Resin coated paper can be used in the UniSetter system. During operation, the paper material is automatically advanced and stored into a light-proof cartridge, called a cassette. With completion of typeset copy the cassette is removed and the stored material developed through an automatic developing processor. Varying widths of 2, 3, 4, 6 or 8 inch photographic material can be accommodated in 150 foot rolls.

Loading Photographic Material

1. Remove the top and bottom covers from the compartments of the Material Transport Assembly (right side of the console).
2. Pull out some of the photographic material from its container to be sure that it will flow freely.
3. Open the pressure plate pivot latches on each side of the transport assembly.
4. Drop the pressure plate down, leaving it in the open position.
5. Leaving an approximate one foot lead, place the container into the lower compartment, with the emulsion side of the material (pink) towards the machine.
6. Align the material against the right-hand margin guide of the assembly and close the plate against the material.
7. Relock the pressure plate by reseating the pivot latches.
8. Replace the bottom cover.
9. Press the Film Feed function on the right side of the Control Panel. This will advance the material past the exposed area to insure proper feed of the photographic material.
10. Cut off the material at the lip of the pressure plate by pulling the material down against the output area of the assembly. (A cutting implement can also be used.)
11. Seat the take-up cassette between the cassette guides in the upper compartment. The opening on the cassette must be face-down over the material.
12. Close the top compartment cover. Again advance the material by pressing the Continuous Lead function and proceed with tape input operation.


Pivot Latch
Pivot Latch


Photographic Material
(Lead)
Right Hand
Margin Guide
Pressure Plate


Take-up Cassette
Lip
Cassette Guides
OPERATOR
TO CLOSE DOOR FULLY
ROTATE ROLLER TO
ENGAGE GEAR

CONTROL PANEL

The Control Panel, on the front of the UniSetter system, consists of a Tape Input Mode Switch, Film Counter, Font Drum Power Switch, and momentary switches for Start, Stop and Film Feed. Safeguard indicators for over maximum line length, overset condition, no film and system busy are also located on the Control Panel.

Tape Input Control

The input control selects operating modes as follows:

External input: This mode must be used when the UniSetter operation is directly on-line to a computer, Compugraphic's Unified Composer or UniTerm input systems.

6-level Input: This is the **normal operating mode** for processing justified or unjustified 6-level TTS input tape. All functions are accessed under tape control.

Wire Service: This position must be selected when running 6-level wire service text or stock. The wire service measure, point size, typeface and leading must be specified before running wire service input.

Test Program: This mode is used to verify the operating program by reading in a specially prepared program test tape.

6-Level Test: The 6-level test position is used for servicing and testing components in the UniSetter system.

Film Counter

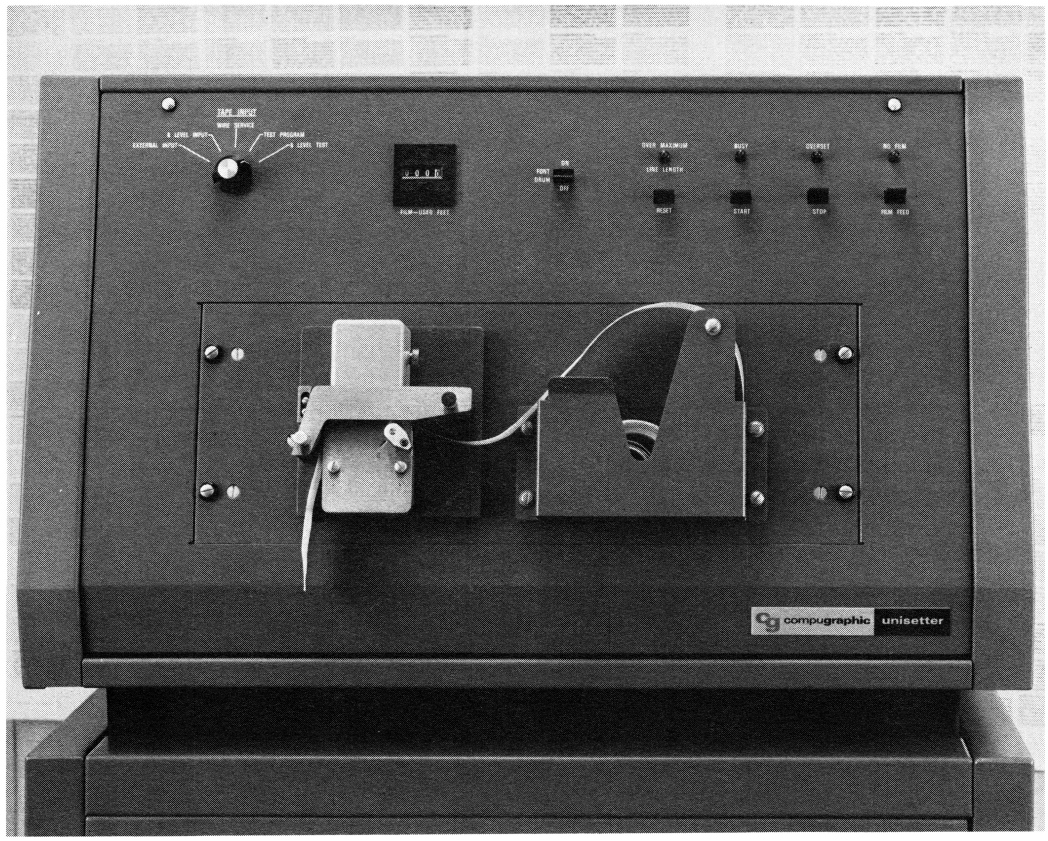
The film counter indicates the amount of the photographic material that has been used in feet and tenths of a foot. The counter should be restored to a zero value when loading a new box of photographic material.

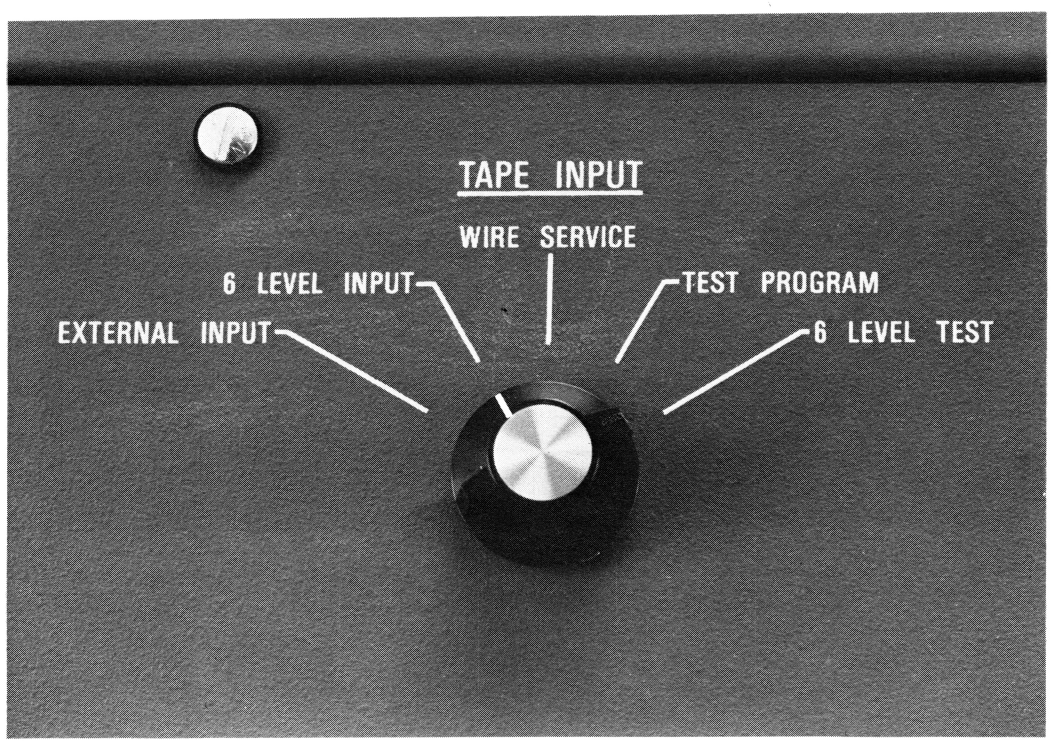
Film Feed

Activation of the Film Feed switch advances the photographic material a preset amount. This amount can be adjusted from 3 to 12 inches. Six inches is considered standard. It is recommended that this adjustment be made by a Service Representative.

Start

Pressing the momentary Start switch starts the processing of input tape through the reader.


TAPE INPUT
WIRE SERVICE
6 LEVEL INPUT
EXTERNAL INPUT
TEST PROGRAM
6 LEVEL TEST
FILM—USED FEET
ON
PUNT
DRUM
OFF
OVER MAXIMUM
LINE LIMITH
RESET
START
STOP
NO. FILM
FILM FEED
compugraphic
unisetter


TAPE INPUT
WIRE SERVICE
6 LEVEL INPUT
TEST PROGRAM
EXTERNAL INPUT
6 LEVEL TEST

Stop

Activation of the Stop switch, stops the tape reader. Tape codes entered before stopping the reader will continue to be processed through the system.

Font Drum Power Switch

The Font Drum Power Switch controls both power to the Font Drum Motor and the locking mechanism to the font drum compartment. It must be turned off to access the font compartment for installing film strips. The door of the font compartment remains locked for 20 seconds after the switch has been turned off allowing for the font wheel to come to a stop. This is provided as a safety factor for the operator of the system.

Reset

The momentary Reset switch clears the UniSetter, restoring the system to point size 6 and type style one. An automatic operating mode will be inserted as follows:

Automatic Line Ending

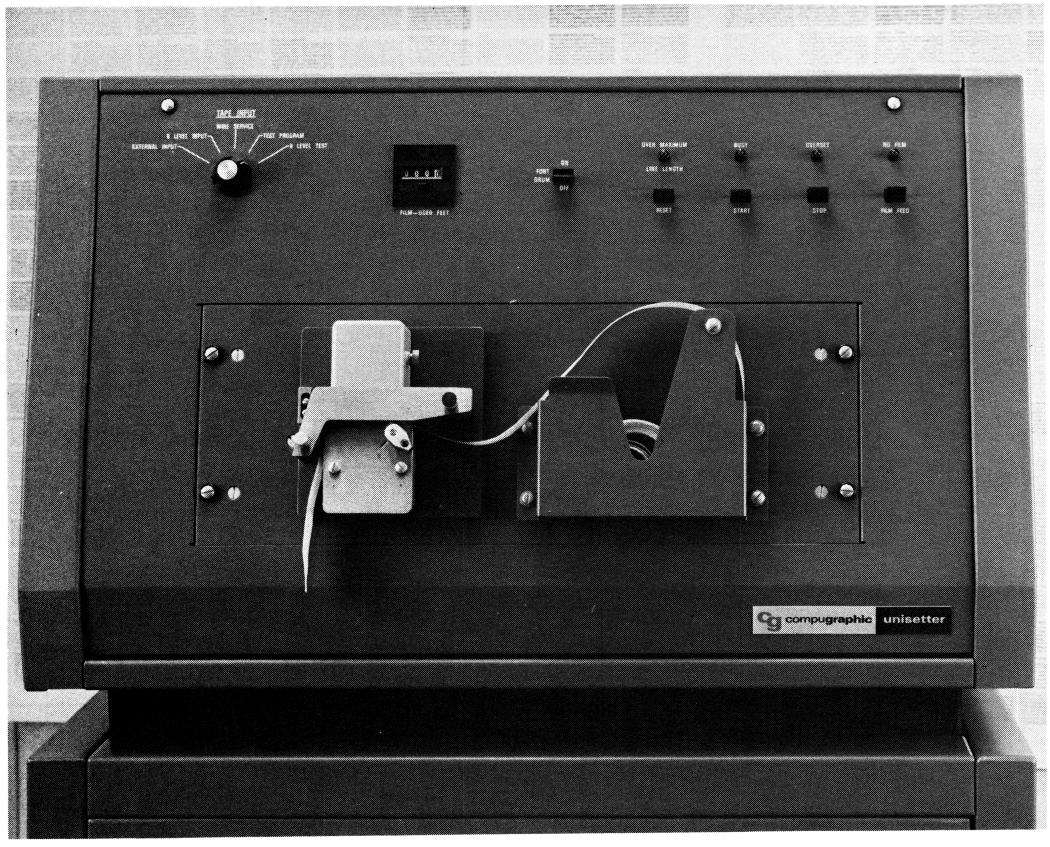
Automatic Line Ending is the normal mode when operating with unjustified tape. Line Ending decisions for the justification of unjustified tape lines will be made by the logic of the UniSetter system.

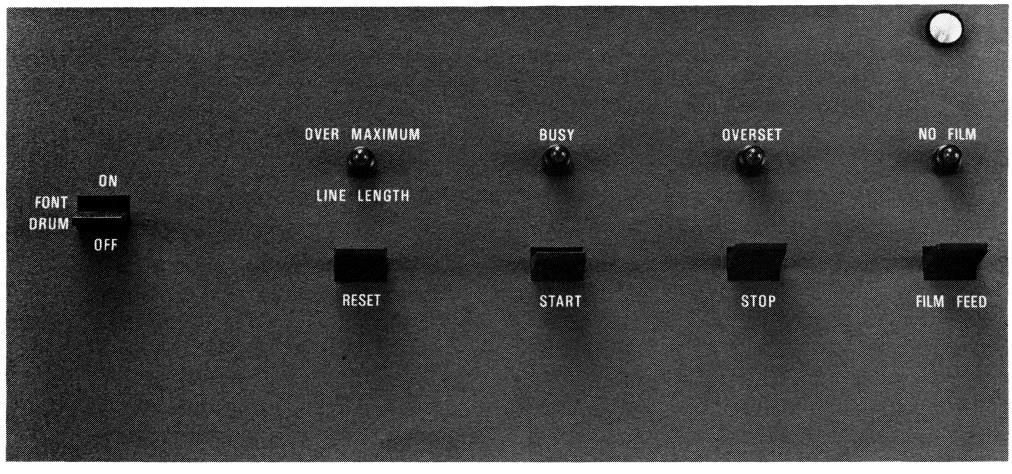
Automatic Letterspacing

Letterspacing will occur when the expansion factor of interword space (space bands) cannot fill (justify) the typeset lines. Letterspacing, up to a maximum of three units (1/54 of Em) will be automatically inserted between all characters in a justified line.

Hyphenation On

Logical hyphenation will be automatically inserted during the calculation of Automatic Line Endings for justification of lines.


TAPE INPUT
EXTERNAL INPUT
N LEVEL INPUT
WIRE SERVICE
TEST PROGRAM
N LEVEL TEST
FILM—USER FEET
FONT
DRUM
ON
OFF
OVER MAXIMUM
LINE LENGTH
BUSY
OVERSET
NO FILM
RESET
START
STOP
FILM FEED
compugraphic
unisetter


ON
FONT
DRUM
OFF
OVER MAXIMUM
LINE LENGTH
BUSY
OVERSET
NO FILM
RESET
START
STOP
FILM FEED

Automatic Character Compensation

The UniSetter uses a lens system to obtain point sizes from the 8 pt. image on the film strip. When the lens increases the size of the image, the allowable space to be placed between characters is increased proportionately. To compensate for this additional spacing, the UniSetter is programmed to automatically reduce character spacing in proportion to the point size. This reduction is only effective for the larger sizes (14 to 72 point).

Minimum/Maximum Spacing

The Reset function restores word space to a minimum value of four (4) units with an allowable expansion to 18 units for the justification of lines. Letterspacing will occur when the allowable expansion factor of word space cannot justify the line.

Note: Activation of the Reset switch clears all stored data from the system. All deleted function data must be reinserted after striking the Reset Switch.

INDICATORS

Over Maximum Line Length

This indicator is activated when the maximum line measure of 45 picas has been exceeded.

Busy

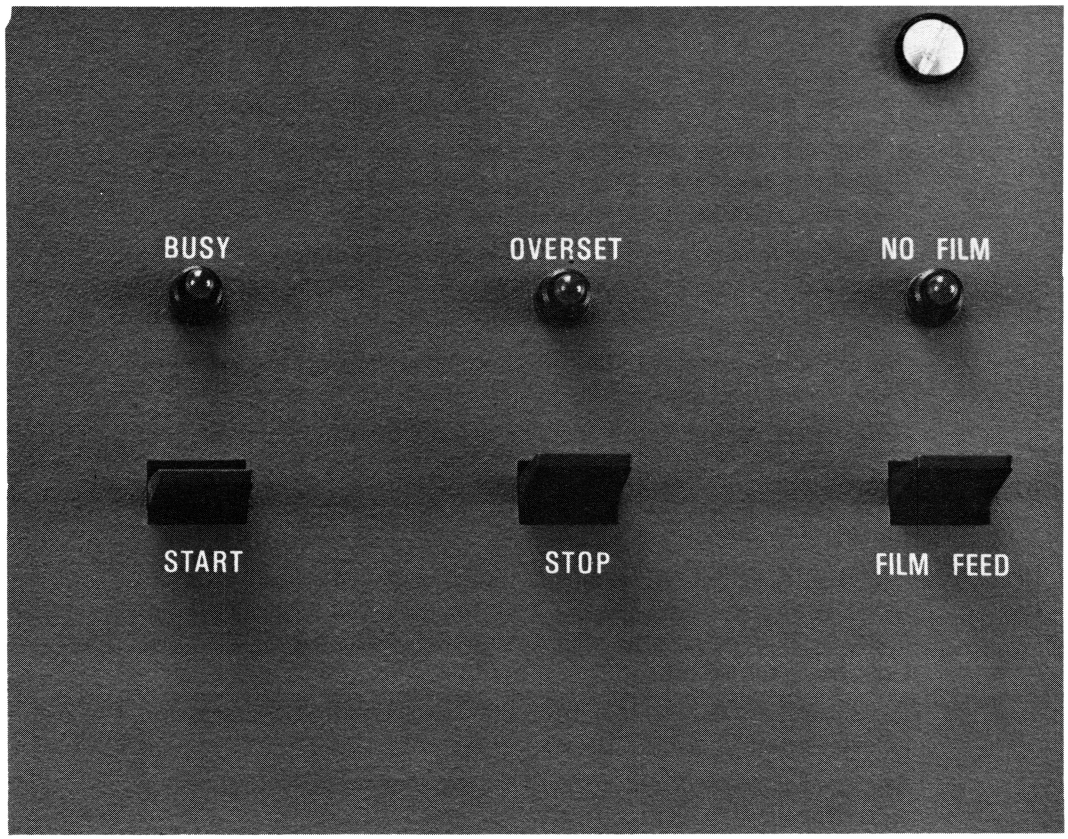
The Busy Light indicates the UniSetter is processing data.

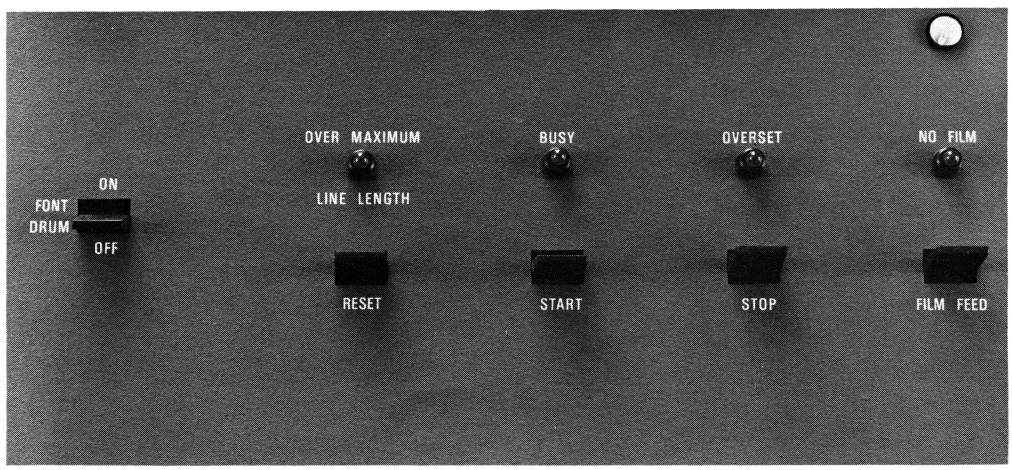
Overset

The Overset light indicates an overset condition in the selected line measure.

No Film

The No Film Light indicates the depletion of photographic material. Operation of the UniSetter will be stopped until photographic media has been replenished.


BUSY
OVERSET
NO FILM
START
STOP
FILM FEED

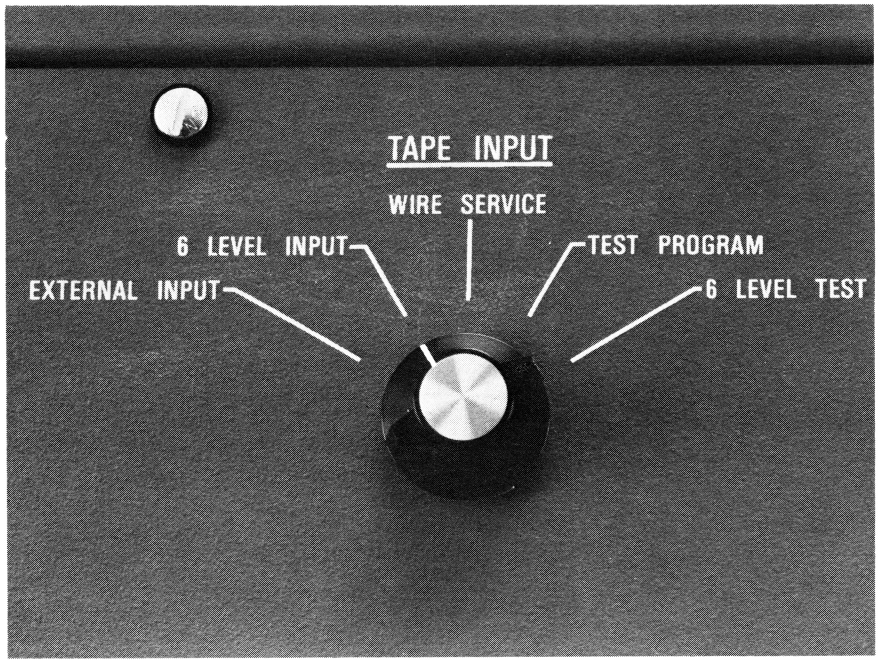

OVER MAXIMUM
LINE LENGTH
BUSY
OVERSET
NO FILM
ON
FONT
DRUM
OFF
RESET
START
STOP
FILM FEED

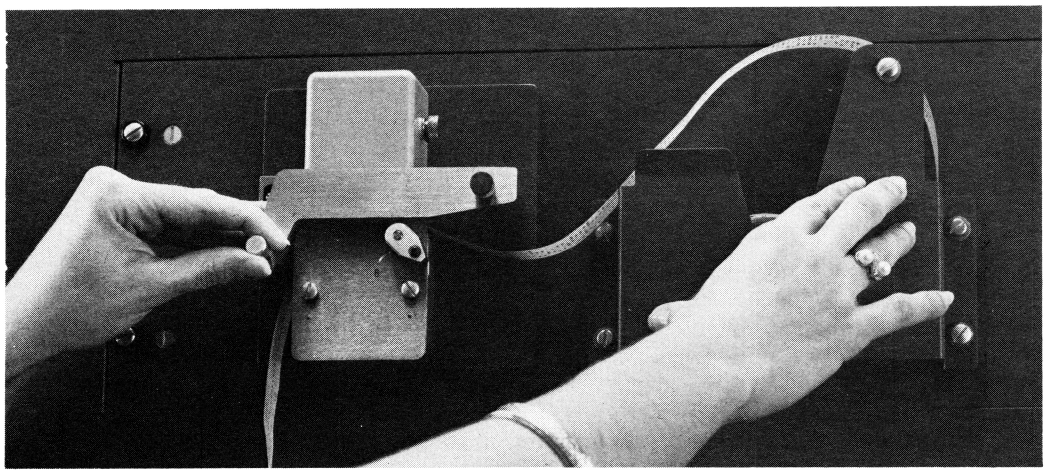
PROCESSING TAPE DATA

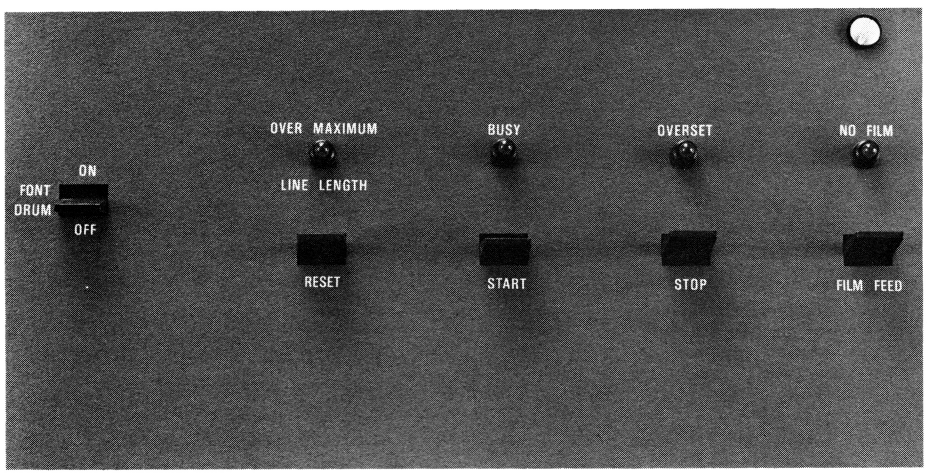
Processing of tape is accomplished with the following procedures:

1. Install the receiving cassette into the paper transport compartment. Close the compartment door and press Film Feed. This will advance the photographic material to an unexposed area.
2. Place the Tape Input switch on the Control Panel of the UniSetter to 6-level input.
3. Raise the Tape Reader head.
4. Insert the input tape with the zero code holes nearest the machine. The tape will read from right to left.
5. Press Reset on the Control Panel, accessing the Automatic mode of operation.
6. Press Start. The input tape will now process, reading tape data into the Phototypesetter.
7. After the tape has been read, the stop code placed at the end of the tape will stop the tape reader. The processing of stored data will continue in the UniSetter until completed, indicated by the Busy Light being turned off.
8. Press Film Feed **twice,** advancing the exposed typeset material into the light-proof receiving cassette.
9. Remove the cassette and develop the exposed material through the automatic developing processor.

OPERATOR
TO CLOSE DOOR FULLY
ROTATE ROLLER TO
ENGAGE GEAR


TAPE INPUT
WIRE SERVICE
6 LEVEL INPUT
TEST PROGRAM
EXTERNAL INPUT
6 LEVEL TEST




OVER MAXIMUM
LINE LENGTH
BUSY
OVERSET
NO FILM
ON
FONT
DRUM
OFF
RESET
START
STOP
FILM FEED

MARKUP OF EXERCISES

As a guide for setting the following exercises the markup in this manual is illustrated as follows:

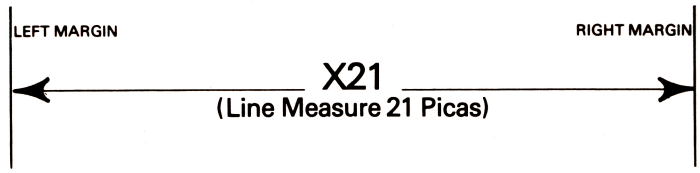
X21	Represents the Line Measure in Picas.
(10)	Represents the Type Size in points.
*F1-8	Represents the Type Style (one to eight).
/12	Represents Line Space (Leading).
12/24	Represents Line Space and additional space between paragraphs or blocks of copy.
Compugraphic	Set Italic
Compugraphic	Set Bold
Compugraphic	Set All Caps
FL	Set copy Flush Left on the Left Margin
FR	Set copy Flush Right on the Right Margin.
Just	Set copy justified (margin to margin).
[1]	Em Space
[ ]	En Space
⌐———⌐	Make One Line

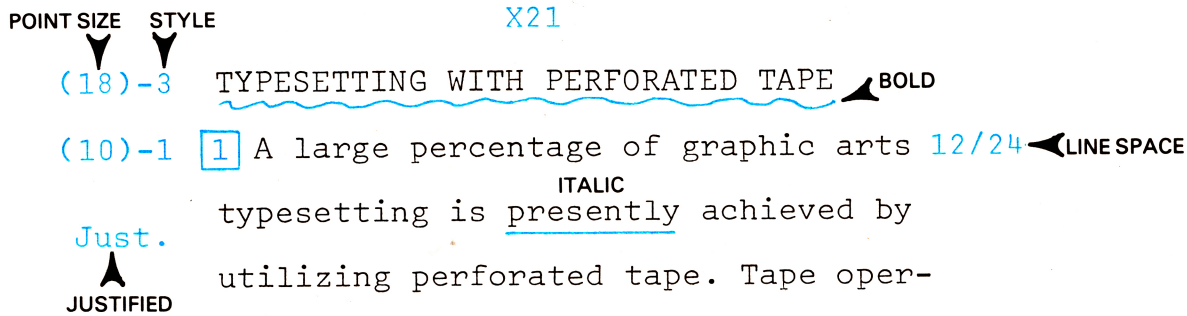
NOTE: If positioning of typeset copy is not indicated, those lines will be set Centered.

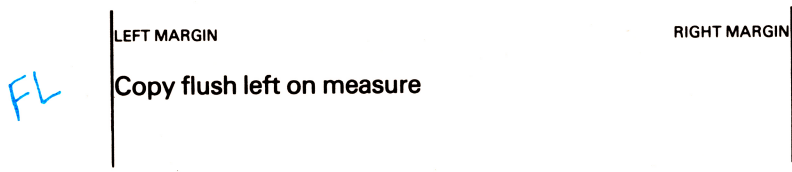
***IMPORTANT: Type styles will vary with each installation. When setting the following examples, use available type styles applicable to the exercise.**

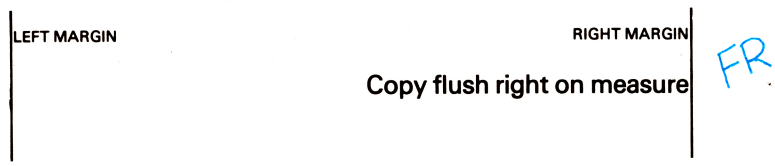
ANSWERS

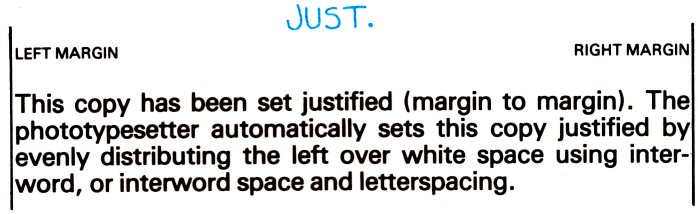
6 point to 10 point — 10 points of lead
10 point to 18 point — 18 points of lead
18 point to 14 point — 16 points of lead
14 point to 36 point — 36 points of lead
36 point to 12 point — 20 points of lead


LEFT MARGIN
RIGHT MARGIN
X21
(Line Measure 21 Picas)


POINT SIZE
STYLE
X21
(18)-3
TYPESETTING WITH PERFORATED TAPE
BOLD
(10)-1
1
A large percentage of graphic arts 12/24
LINE SPACE
ITALIC
Just.
JUSTIFIED
typesetting is presently achieved by
utilizing perforated tape. Tape oper-
ation permits the use of basic type-
writer-like keyboards.
The speed of the typesetter is another
reason, and prime factor for the use of
perforated tape.


LEFT MARGIN
RIGHT MARGIN
FL
Copy flush left on measure


LEFT MARGIN
RIGHT MARGIN
Copy flush right on measure
FR


JUST.
LEFT MARGIN
RIGHT MARGIN
This copy has been set justified (margin to margin). The phototypesetter automatically sets this copy justified by evenly distributing the left over white space using interword, or interword space and letterspacing.

Line Space (Leading)

Referred to as "leading" (pronounced "ledding"), the Line Space function is widely used in phototypesetting. Similar to the spacing of lines on a typewriter, the line space is simply the advancement of photographic paper to allow space for setting a new line. Unlike the typewriter, where the size of type is uniform, the phototypesetter has many variations of sizes. Line Space, therefore, must be achieved in both large and small increment values.

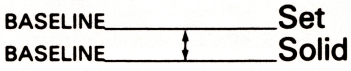
Although the actual face size or surface of the type varies according to styles, the capital letters, figures and ascenders occupy the upper two-thirds of the point size, ie., the upper portion of an 18 point character would have an average cap height of 12 points, while the remaining one-third would account for the descender plus a "shoulder" of space. This "shoulder" which varies, relative to type style, provides minimum space between lines when setting solid (line-for-line).

In most systems, spacing for lines is calculated from baseline to baseline of the body of the type which permits in-line mixing of various point sizes. **This baseline is an imaginary line on which the body of the letters rest, excluding the descenders.**

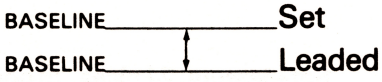
The point size is the determining factor when selecting Line Space. In solid composition, where additional space is not required, Line Space will be equal to the point size. For example: 12 point type would be set with 12 points of Line Space. Where additional line space is required, it is simply added to this value. For example, 12 point type set with 16 points of Line Space. This would be referred to as being set leaded, with four additional points.

It should be noted that the line space is **not** for the line that is being set, that photographic material is advanced after a line is typeset to allow space for the coming line. When varying sizes, if setting type in a small point size and having to allow space for a larger point size, line space would be equal to or greater than the larger point size. For example, if setting 12 point type to be followed by a 36 point type, the Line Space would be 36 points or more.

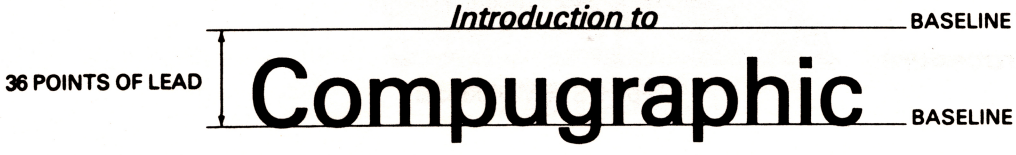
When the point size is larger than the line that follows, additional Line Space must be added to allow for the descenders of lower case characters of the larger point size. This line space is evaluated by allowing space for the value of one-third of the larger point size to be added to two-thirds of the smaller. This will provide minimum line space when mixing most styles of type.



12 POINT TYPE, 12 POINTS OF LEAD



12 POINT TYPE, 16 POINTS OF LEAD



TTS CODES	FUNCTION
SS/SMXXXX**/SS	Set Measure

KEYBOARD TAPE OPERATION

TTS tape being limited in code configurations makes it necessary to access additional characters and functions with special command codes. The **TTS Add Thin code** (bit 03) is used as a command code to access functions on the phototypesetter. The Add Thin code (designated "Super Shift"), when combined with other TTS codes, instructs the phototypesetter to recognize these codes as functions, and activates the function associated with the Super Shift code. A second Super Shift immediately following the function codes, acts as a command to restore the system to recognize succeeding codes as alphanumeric characters. Super Shift commands are inserted as follows:

Set Measure (Line Length)

Any measure from 0 to 45 picas can be selected by a "Set Measure" command. **Four digits, representing picas and points, must be entered at all times.**

Example:

Set Measure, 24 picas

Procedure:

Type* SS/SM2400/SS

Example:

Set Measure, 24 picas, 10 points

Procedure:

Type SS/SM2410/SS

Example:

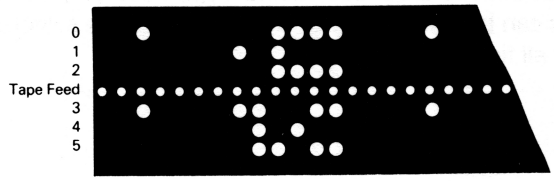
Set Measure 24 picas, 6 points

Procedure:

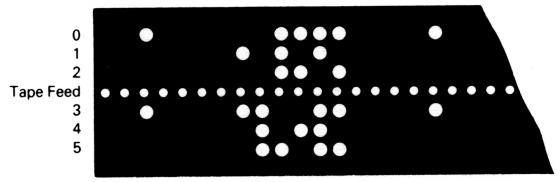
Type SS/SM2406/SS

***Note:** "SS" denotes the Super Shift function codes. The slash is shown to separate the Super Shift code from the function codes in the instructions, and is not part of the Super Shift command. **Function codes can be inserted in either a Shift or Unshift condition, not both.**

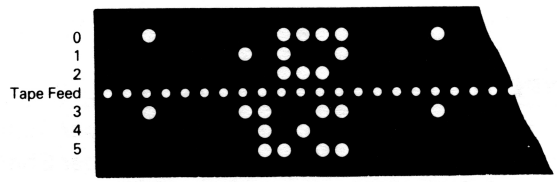
**"X" represents numeric value to be inserted to complete the command.



Super Shift, SM2400, Super Shift
(24 Pica Measure)



Super Shift, SM2410, Super Shift
(24 Pica, 10 Point Measure)



Super Shift, SM2406, Super Shift
(24 Pica, 6 Point Measure)

TTS CODE	FUNCTION
SS/FX*/SS	Type Face

Type Face (Type Style)

Type style selections are made with a Type Face command. Any one of eight styles can be selected, with **one digit,** for the selected face, being entered at all times.

Example:

Face One

Procedure:

Type SS/F1/SS

Example:

Face 5

Procedure:

Type SS/F5/SS

Example:

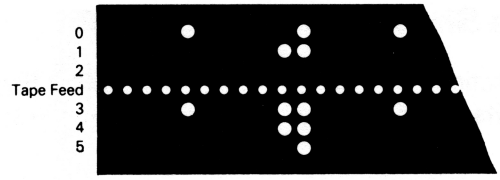
Face 8

Procedure:

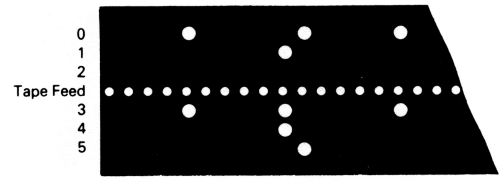
Type SS/F8/SS

TYPE STYLE	TTS CODE
Face 1	Super Shift, F1, Super Shift
Face 2	Super Shift, F2, Super Shift
Face 3	Super Shift, F3, Super Shift
Face 4	Super Shift, F4, Super Shift
Face 5	Super Shift, F5, Super Shift
Face 6	Super Shift, F6, Super Shift
Face 7	Super Shift, F7, Super Shift
Face 8	Super Shift, F8, Super Shift

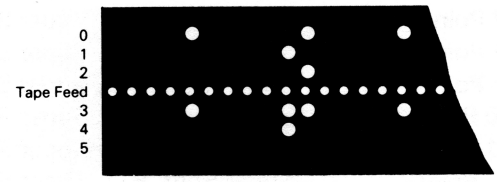
*"X" represents numeric value to be inserted to complete the command.



Super Shift, F1, Super Shift
(Face 1)



Super Shift, F5, Super Shift
(Face 5)



Super Shift, F8, Super Shift
(Face 8)

Point Size (Type Size)

Point size selections (6 to 72 point) are made with a Point Size command. **Two digits,** for the selected size, must be entered at all times.

Example:

Point Size 12

Procedure:

Type SS/P12/SS

Example:

Point Size 8

Procedure:

Type SS/P08/SS

Example:

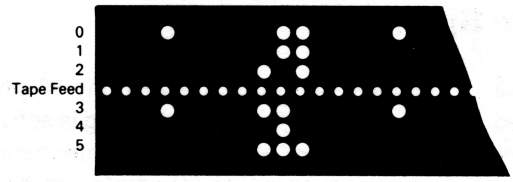
Point Size 36

Procedure:

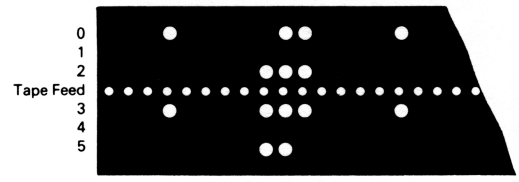
Type SS/P36/SS

POINT SIZE	TTS CODE
6 Point	Super Shift, P06, Super Shift
7 Point	Super Shift, P07, Super Shift
8 Point	Super Shift, P08, Super Shift
9 Point	Super Shift, P09, Super Shift
10 Point	Super Shift, P10, Super Shift
11 Point	Super Shift, P11, Super Shift
12 Point	Super Shift, P12, Super Shift
14 Point	Super Shift, P14, Super Shift
18 Point	Super Shift, P18, Super Shift
24 Point	Super Shift, P24, Super Shift
36 Point	Super Shift, P36, Super Shift
48 Point	Super Shift, P48, Super Shift
60 Point	Super Shift, P60, Super Shift
72 Point	Super Shift, P72, Super Shift

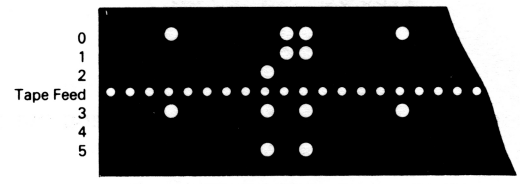
*"X" represents numeric value to be inserted to complete the command.



Super Shift, P12, Super Shift
(12 Point)



Super Shift, P08, Super Shift
(8 Point)



Super Shift, P36, Super Shift
(36 Point)

Set Leading (Line Space)

The Set Leading command controls the amount of photographic material advanced when typesetting lines. The leading is activated by the Return code or automatic line ending as determined by the phototypesetter. Leading values from 0 to 99 points can be selected in one point and half point increments, with **three digits** entered at all times. Leading values are preset for the coming line, i.e., the photographic material will be advanced after the line has been photographed. Therefore, leading values should be equal to or greater than the next point size, in the next line. (See Line Space, page 38-39.)

Example:

Set Leading, 36 points

Procedure:

Type SS/SL360/SS

Example:

Set Leading, 10 points

Procedure:

Type SS/SL100/SS

Example:

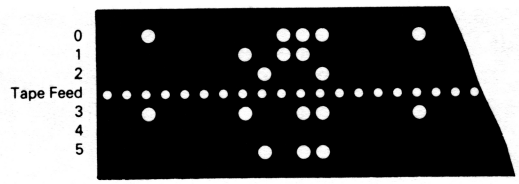
Set Leading, 10½ points

Procedure:

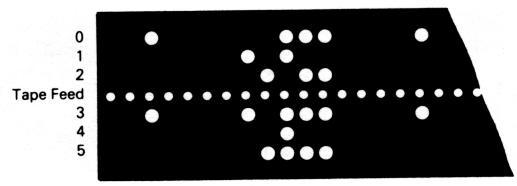
Type SS/SL101*/SS

***Note:** Half point increments are selected by entering the digit one in place of the zero (0) value.

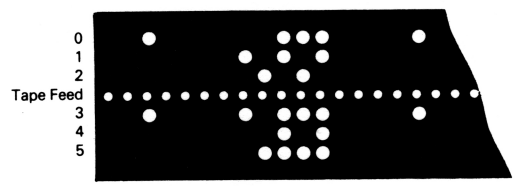
**"X" represents numeric value to be inserted to complete the command.



Super Shift, SL360, Super Shift
(36 Points Lead)



Super Shift, SL100, Super Shift
(10 Points Lead)



Super Shift, SL101, Super Shift
(10½ Points Lead)

Multiple Function Commands

Multiple functions can be inserted within the frame of one block of Super Shift commands. The function codes can be inserted in any order, but must be preceded and ended by the Super Shift command code. Function codes can be inserted in either a Shift or Unshift condition, not both.

Example:

Set Measure 24 picas; Face 2; Point Size 12, Set Leading 14 points

Procedure:

Type SS*/SM2400/F2/P12/SL140/SS

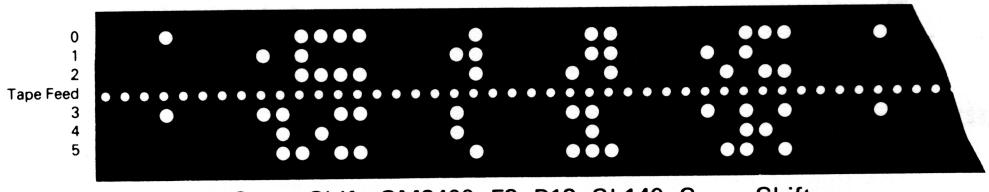
Example:

Face 2; Point Size 12; Set Measure 24 picas; Set Leading 14 points

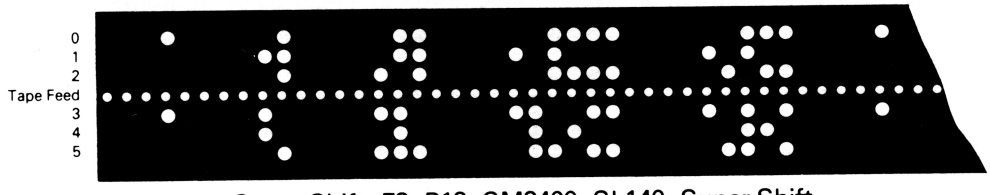
Procedure:

Type SS/F2/P12/SM2400/SL140/SS

***Note:** "SS" denotes the Super Shift function codes. The slash is shown to separate the Super Shift code from the function codes in the instructions, and is not part of the Super Shift command.



Super Shift, SM2400, F2, P12, SL140, Super Shift
(24 Pica Measure, Face 2, Point Size 12, Leading 14 Points)



Super Shift, F2, P12, SM2400, SL140, Super Shift
(Face 2, Point Size 12, 14 Points Lead)

CANCEL FUNCTIONS

Three functions are available for making corrections during data input to the tape.

Rubout

The Rubout code is utilized for the correction of individual alphanumeric characters or function codes.* It is used by reversing the tape to the erroneous code, over-striking the rubout code which punches all 6-bits of the frame. When the tape is read, the Rubout code will be ignored by the phototypesetter.

Cancel Word

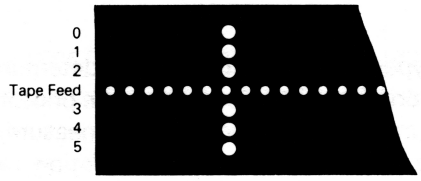
The Cancel Word command, activated by the Elevate code in the Lower Case mode, cancels all data back to the previous word space. It can be inserted without limitation, recognizing and cancelling interword space as an individual word. **When operating with keyboards where multiple (two) cancel word codes are punched, simultaneously, the space band prior to the word will also be cancelled, and must be reinserted whenever the double cancel word function has been activated.**

Cancel Line

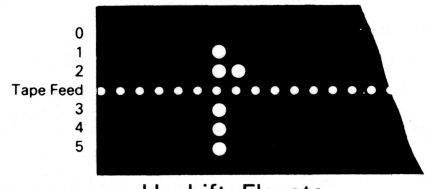
In the Upper Case mode, the Elevate code is a Cancel Line command, cancelling all characters and functions back to the previous return code or automatic line ending as determined by the phototypesetter. With tape operation, it is recommended that the Rubout or Cancel Word function be used to make corrections, since there is no way to determine line endings in unjustified tape lines.

CAUTION: If function codes have been cancelled while making corrections, they must be reinserted.

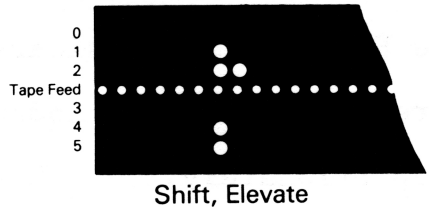
*The Rubout code is recommended for making corrections during the insertion of function commands.



Rubout



Unshift, Elevate



Shift, Elevate

Justified Lines

Justification of typeset lines is automatically determined by the phototypesetter. Activation of the Reset switch on the phototypesetter will select the automatic mode of operation. A line measure, point size, type face and line space must be inserted for calculation and justification of the typeset lines.

Exercise:

Set the following, inserting a tape lead and the functions as shown and indicated in the markup of the paragraph.

Function Codes: SS/SM1800/P10/F1/SL120/SS/Return*

X18

(10)-F1 [1] The Em space is a proportional space, equal /12
to the square or set of the point size. For example,
the Em space of 10 point type in most styles would
be 10 points high and 10 points wide, while the Em
of eight point type would be 8 points high and 8
points wide. The Em space is used for paragraph
indentions and alignment of type data. On narrow
measures, one Em space is considered sufficient,
as the measure increases, the indent can be
increased proportionately.

*The Return code is not necessary, but recommended at the beginning of typesetting operations to lock in functions. It also advances the photographic material by the amount of set leading value allowing space for a new line.

Procedure:

1. Strike an Em space for the indention of the paragraph.
2. Typeset the entire copy, ending the paragraph with a Quad Left and Return code.
3. End the tape with a Stop code, and process.**

Typeset Copy:

The Em space is a proportional space, equal to the square or set of the point size. For example, the Em space of 10 point type in most styles would be 10 points high and 10 points wide, while the Em of eight point type would be 8 points high and 8 points wide. The Em space is used for paragraph indentions and alignment of type data. On narrow measures, one Em space is considered sufficient, as the measure increases, the indent can be increased proportionately.

****Note:** The completed tape can be processed as described on Page 34.

TTS CODES	FUNCTIONS
SS/JX/SS	Letterspace Off
SS/HX/SS	Hyphenation Off
SS/LJ/SS	Letterspace On
SS/HO/SS	Hyphenation On

Letterspacing and/or Hyphenation

During normal operation letterspacing and/or hyphenation will be obtained while in the automatic mode for justification of lines. Variations in the automatic line ending mode of operation can be made by either **Letterspace and/or Hyphenation Off commands.** If activated, loosely fitted lines will no longer be automatically letterspaced and deficit in the justified lines will be inserted as interword space. All logical hyphenation in the justification of lines will be excluded. Either function can be restored to an operating mode from tape command, or by activation of the Reset switch on the Control Panel.

Exercise:

Reset the previous paragraph as shown. The only change will be in the function commands.

Function Codes: SS/SM1800/P10/F1/SL140/JX/HX/SS/Return

X18

(10)-F1 [1] The Em space is a proportional space, equal /12
to the square or set of the point size. For example,
the Em space of 10 point type in most styles would
be 10 points high and 10 points wide, while the Em
of eight point type would be 8 points high and 8
points wide. The Em space is used for paragraph
indentions and alignment of type data. On narrow
measures, one Em space is considered sufficient,
as the measure increases, the indent can be
increased proportionately.

Procedure:

1. Strike an Em Space for the indention of the paragraph.
2. Typeset the entire copy, ending the paragraph with a Quad Left and Return code.
3. End the tape with a Stop code and process.

Typeset Copy:

The Em space is a proportional space, equal to the square or set of the point size. For example, the Em space of 10 point type in most styles would be 10 points high and 10 points wide, while the Em of right point type would be 8 points high and 8 points wide. The Em space is used for paragraph indentions and alignment of type data. On narrow measures, one Em space is considered sufficient, as the measure increases, the indent can be increased proportionately.

Discretionary Hyphen

As an adjunct to the logical hyphenation determined during calculation for justified lines, a Discretionary Hyphen can be inserted by direct command. It is normally utilized in short measures and inserted in those words which might cause wide interword spacing, **over-riding** any logical hyphenation where inserted. When activated, the Discretionary Hyphen will be inserted at the end of a line under the following conditions.

A. The entire word where the Discretionary Hyphen is inserted **does not** fit into the measure.

B. That portion of the word where the Discretionary Hyphen is inserted, up to and including the hyphen fits into the measure.

C. If the Discretionary Hyphen does not fall into the justification zone, it will be ignored, and logical hyphenation inserted if applicable to justification.

Example:

Compugraphic sells pho(DH)to(DH)type(DH)set(DH)ting machines.

X12
Compugraphic sells phototypeset-
ting machines.

X11
Compugraphic sells phototype-
setting machines.

X9
Compugraphic sells pho-
totypesetting machines.

Exercise:

Set the following justified paragraph as illustrated in the markup. Reset it a second time inserting the Discretionary Hyphen and compare.

```
                    X11
(10)-F1    [1] The Em space is a proportional space, equal /12
to the square or set of the point size. For example,
the Em space of 10 point type in most styles would
be 10 points high and 10 points wide, while the Em
of eight point type would be 8 points high and 8
points wide. The Em space is used for paragraph
indentions and alignment of type data. On narrow
measures, one Em space is considered sufficient,
as the measure increases, the indent can be
increased proportionately.
```

*(DH) Discretionary Hyphen

Procedure:

1. Type the complete paragraph, ending with a Quad Left and Return code.
2. Retype the paragraph, inserting a tape feed code at a proper hyphenation point within any long word which might create a poor word break.
3. End the tape with a Stop code and process.

Typeset Copy:

The Em space is a proportional space, equal to the square or set of the point size. For example, the Em space of 10 point type in most styles would be 10 points high and 10 points wide, while the Em of eight point type would be 8 points high and 8 points wide. The Em space is used for paragraph indentions and alignment of type data. On narrow measures, one Em space is considered sufficient, as the measure increases, the indent can also be increased.

The Em space is proportional space, equal to the square or set of the point size. For example, the Em space of 10 point type in most styles would be 10 points high and 10 points wide, while the Em of eight point type would be 8 points high and 8 points wide. The Em space is used for paragraph indentions and alignment of type data. On narrow measures, one Em space is considered sufficient, as the measure increases, the indent can also be increased.

INTERWORD SPACE CONTROL

Define Space Band Minimum

In the normal mode of operation, interword space value is automatically defined to a minimum value of four (4) units, relative to the point size. That is, the space between words will never be less than 4 units with an allowable expansion of 18 units for justification of lines. This value can be increased to 5, 6 or 8 relative units with the Define Minimum Space Band Super Shift command (SS/MNXX/SS). **Two digits must be entered at all times.** It should be noted that changing the value of interword space will affect the justification range in the line.

Exercise:

Set the following copy as marked. Reset the line increasing interword space to 5, 6 and 8 relative units and compare.

```
                    X45
(12)-F3  Interword space controls the justification of lines.  /14
```

Procedure:

1. Set the 12 point line in the normal mode of operation, Quad Left, Return code.
2. Increase interword space to 5 units (SS/MN05/SS). Reset the line, Quad Left, Return code.
3. Increase interword space to 6 units (SS/MN06/SS). Reset the line, Quad Left, Return code.
4. Increase the interword space to 8 units (SS/MN08/SS). Reset the line Quad Left, Return code.
5. Remember to restore the mode to the standard minimum value of four (4) units (SS/MN04/SS) or by striking Reset on the Control Panel.
6. End the tape with a stop code and process.

Typeset Copy:

Interword space controls the justification of lines.
Interword space controls the justification of lines.
Interword space controls the justification of lines.
Interword space controls the justification of lines.

Define Space Band Maximum

Justification of lines is achieved by the expansion of space between words. This expansion is normally controlled by hyphenation of words at the end of the lines. When justification with hyphenation is not obtainable within the logic of the system, interword space will be combined with intercharacter spacing (letterspacing) for justification. Justification can also be controlled by redefining values for interword expansion. The Super Shift command Define Space Band Maximum (SS/MXxx/SS) can define maximum expansion values from zero (0) to 60 units. Two digits must be entered at all times. Increasing maximum interword space expansion will limit insertion of automatic letterspacing for justification of lines. It can be restored to the normal value of 18 units by the function code or by operation of the Reset Switch on the Control Panel.

Exercise:

Set the following justified paragraph as marked in the copy. Reset the paragraph a second time, defining Space Band Maximum to 36 units and compare.

X18

(10)-F1 Even line lengths are achieved as previously /12
described, by varying the size of the spaces
used between words -- shortening long lines by
using thin spaces and stretching the short lines
is called justification. The longer the line
the greater the number of words over which these
inequalities can be divided, the less objectionable
it becomes.

Procedure:

1. Set the 10 point paragraph justified on the 18 pica measure, ending with the Quad Left, Return code.
2. Define Space Band Maximum to 36 units (SS/MX36/SS). Reset the paragraph.
3. End the tape with a Stop code and process. Be sure to prime (Reset) the system before processing the tape.

Typeset Copy:

Even line lengths are achieved as previously described, by varying the size of the spaces used between words — shortening long lines by using thin spaces and stretching the short lines is called justification. The longer the line the greater the number of words over which these inequalities can be divided, the less objectionable it becomes.

Even line lengths are achieved as previously described, by varying the size of the spaces used between words — shortening long lines by using thin spaces and stretching the short lines is called justification. The longer the line the greater the number of words over which these inequalities can be divided, the less objectionable it becomes.

TTS CODE	FUNCTION
Quad Left Return	Quad Left

Flush Left Lines

Typeset copy can be positioned on the left margin of the selected line measure. It is referred to as "Quad Left Lines." The Quad Left, followed by the Return code, activates the flashing of characters on the left margin, disregarding all remaining space in the line. Interword space will be inserted with a minimum value of four (4) units.

Exercise:

Set the following copy on the left margin. Follow the markup of copy as shown. (Set Measure 21 picas, Point size 12, Face 3, Set Leading 14 points.)

Function Codes: SS/SM2100/P12/F3/SL140/SS/Return

```
                    X21

(12)-F3     THE QUAD LEFT/RETURN /14
            CODES POSITION TYPE
(Set All    ON THE LEFT MARGIN OF
Caps.)      THE LINE MEASURE. THE
            RETURN CODE ACTIVATES
            LINE SPACE FOR
            THE NEXT LINE.
```

Procedure:

1. Type the first line *THE QUAD LEFT/RETURN.*
2. End the line with a Quad Left and Return code.
3. Repeat the procedure for each line.
4. When all lines have been typeset, strike an extra Return code after the last line. This will activate the primary Line Space, generating additional space to allow space for the next exercise that follows.
5. End the tape with a Stop code.

Typeset Copy:

THE QUAD LEFT/RETURN
CODES POSITION TYPE
ON THE LEFT MARGIN OF
THE LINE MEASURE. THE
RETURN CODE ACTIVATES
LINE SPACE FOR
THE NEXT LINE.

TTS CODES	FUNCTION
SS/QC/SS Return	Quad Center

Centered Lines

Typeset copy can be centered on the selected line measure with the Quad Center function (SS/QC/SS) and a Return code. The type is centered by dividing the remaining space in the line and inserting it on both sides of the copy. The Quad Center function must be followed by the Return code to activate phototypesetting and line space for the next line. Interword space will be the minimum value of four units.

Exercise:

Using the same function codes provided for the previous exercise, set the following copy.

Function Codes: SS/SM2100/P12/F3/SL140/SS/Return

```
                    X21
(12)-F3      THE QUAD CENTER/RETURN   /14
(Set All
Caps)      CODES POSITION TYPE ON THE
                CENTER OF THE MEASURE.
              THE RETURN CODE ACTIVATES
                   LINE SPACE FOR
                   THE NEXT LINE.
```

Procedure:

1. Typeset the first line *THE QUAD CENTER/RETURN.*
2. End the line with Quad Center function code (SS/QC/SS) and a Return code.
3. Repeat the procedure for each line.
4. When all lines have been typeset, strike an extra Return code after the last line to generate additional space for the next exercise that follows.
5. End the tape with a Stop code.

Typeset Copy:

THE QUAD CENTER/RETURN
CODES POSITION TYPE ON THE
CENTER OF THE MEASURE.
THE RETURN CODE ACTIVATES
LINE SPACE FOR
THE NEXT LINE.

TTS CODE	FUNCTION
SS/QR/SS Return	Quad Right

Flush Right Lines

Typeset copy can be positioned on the right margin of the selected line measure. The Quad Right function will insert all remaining space in the line to the left of the data, aligning the copy on the right margin. The Quad Right function must be followed by the Return code to activate phototypesetting and line space for the next line. Interword space will be the minimum value of four units.

Exercise:

Using the same function codes previously described, set the following copy.

Function Codes: SS/SM2100/P12/F3/SL140/SS/Return

```
                    X21

(12)-F3        THE QUAD RIGHT/RETURN   /14
            CODES POSITION TYPE ON THE
(Set All          RIGHT MARGIN OF THE
Caps.)                  LINE MEASURE.
             THE RETURN CODE ACTIVATES
                        LINE SPACE FOR
                        THE NEXT LINE.
```

Procedure:

1. Typeset the first line *THE QUAD RIGHT/RETURN.*
2. End the line with the Super Shift Quad Right function (SS/QR/SS) and the Return code.
3. Repeat the procedure for each line.
4. End the tape with a Stop code.
5. Process the tape as previously described. The tape will stop for each Stop code. Striking the Start function on the Control Panel will reactivate the reading of the input tape.

Typeset Copy:

THE QUAD RIGHT/RETURN
CODES POSITION TYPE ON THE
RIGHT MARGIN OF THE
LINE MEASURE.
THE RETURN CODE ACTIVATES
LINE SPACE FOR THE
NEXT LINE.

Note: Process the tape as previously described on page 34.

SET LEADING (Preset Line Space)

The Super Shift function Set Leading, commands the phototypesetter to activate selected line space, advancing the photographic material with every Return code or automatic line ending as determined by the system. **The selected value remains in effect for every line until a new line space value has been inserted.** It is important to remember that the preset Line Space is not for the copy that is being set, but for the coming new line. Designated in points, the leading value is normally equal to or larger than the point size of the new line. (See Line Space, page 38-39). Three digits must be entered at all times. Half point increments can be inserted by entering the digit one (1) in place of the zero (0) value.

Example:

SS/SL120/SS — 12 Point
SS/SL180/SS — 18 Points
SS/SL121/SS — 12½ Points

Exercise:

Set the following copy as marked, using solid line space. That is, line space value equal to the point size. Only the point size is indicated, you may select the type style, using a different style for each point size. Mark both the line space value* and the type style on the copy before setting the text. Remember, that the line space function provides advancement of the photographic material for the next line of copy to be set.

X45

(6) FL Photocomposition has many advantages. _____

(10) Photocomposition has many advantages. _____

(18) Photocomposition has many advantages. _____

(14) Photocomposition has many advantages. _____

(36) Photocomposition has many advantages. _____

(12) Photocomposition has many advantages. _____

*See answers, page 36.

Typeset Copy:

Photocomposition has many advantages.
Photocomposition has many advantage.
Photocomposition has many advantages.
Photocomposition has many advantages.
Photocomposition has advantages.
Photocomposition has many advantages.

Mixed Quadding

The following business card illustrates the use of the quadding functions as described in the previous exercises.

Exercise:

Set the business card as indicated in the markup. Typesetting functions are inserted on a line to line basis.

```
                                X18
 (8)-F1  Telephone: (617) 944-6555 FL /24
(10)-F2             Applications Department
(18)-F3             Compugraphic Corp. /16
(10)                Phototypesetters   /24
 (8)-F1                      FR            Wilmington /08
                                   Massachusetts 01887
```

Procedure:

1. Insert typesetting functions for the first line as indicated in the copy markup.
2. Type the first 8 point light face line *Telephone (617) 944-6555* Quad Left, Return code.
3. Change to 10 point, italic type, set *Applications Department*, Quad Center (SS/QC/SS), Return code.
4. Change to 18 point type, a bold style and Line Space to 16 points. Set *Compugraphic Corp.*, Quad Center, Return code.
5. Change to 10 point type, Line Space to 24 points, set *Phototypesetters*, Quad Center, Return code.
6. Change to 8 point type, a light face and Line Space to 8 points. Set *Wilmington*, Quad Right (SS/QR/SS), Return code.
7. Set *Massachusetts 01887*, Quad Right, Return code.
8. End the tape with a Stop code and process.

Typeset Copy:

Telephone: (617) 944-6555

Applications Department

Compugraphic Corp.

Phototypesetters

Wilmington
Massachusetts 01887

Insert Space

Blank space of various proportions can be inserted at any position in a line. The TTS Quad Center code acts as the "Insert Space" command, and where inserted, fills the deficit in the line with blank space. With multiple insertions, the blank space will be equally divided. Referred to as a Quad Middle command, it can be used to position the type (quadding) on both margins. **Insert Space is a justifying function and all lines must be ended with the Return code.**

Exercise:

Set the following copy as marked. Use the Insert Space function for the positioning (quadding) of all lines. Note that Insert Space can position typeset copy centered on the measure, either left or right margins or both.

```
                                X21

(18)-F3          Compugraphic Corporation  /18
Bold
                                   FR (8)  TELEPHONE [1]   /8
   OFFICE LOCATIONS                     Area Code/Number   /12

(10)-F1     Decatur, Georiga              (404) 981-9500
Roman
            Torrance, California          (213) 320-5780

            Rosslyn, Virginia             (703) 525-1678

            Arlington Heights, Ill.       (312) 640-2240

            New York, New York            (212) 736-4444

            Kansas City, Kansas           (913) 371-8200

            Dallas, Texas                 (214) 661-5297

            Bellevue, Washington          (206) 454-9798

(8)-F3                ADMINISTRATION  /12
Bold
   80 Industrial Way Wilmington, Mass. (617) 944-6555
```

Procedure:

1. Insert typesetting functions for the first line as indicated in the copy markup.
2. Insert Space (TTS Quad Center code), type *Compugraphic Corporation,* Insert Space, Return.
3. Change to 8 point type and a bold face. Insert Space, type *TELEPHONE,* Em space, to indent the word telephone from the right margin.
4. Change to 8 point line space, ending the line with the Return code. Note that the line space change can be made prior to the Return code.
5. Type *OFFICE LOCATION,* Insert Space, Type *Area Code/Number.* Change to 12 point line space, end the line with a Return code.
6. Change to 10 point and a light face Roman style. Type *Decatur, Georgia,* Insert Space *(404) 981-9500,* Return code.
7. Repeat the previous procedure for all Office Location lines. Change the Line Space for the last line to 18 points.
8. Change to 8 point type, a bold face, and 12 point line space. Insert Space, type *ADMINISTRATION,* Insert Space, Return code.
9. Set *80 Industrial Way,* Insert Space, *Wilmington, Mass.* Insert Space, *(617) 944-6555,* Return code.
10. End the tape with a Stop code and process.

Typeset Copy:

Compugraphic Corporation

OFFICE LOCATIONS	TELEPHONE Area Code/Number
Decatur, Georgia	(404) 981-9500
Torrance, California	(213) 320-5780
Rosslyn, Virginia	(703) 525-1678
Arlington Heights, Ill.	(312) 640-2240
New York, New York	(212) 736-4444
Kansas City, Kansas	(913) 371-8200
Dallas, Texas	(214) 661-5297
Bellevue, Washington	(206) 454-9798

ADMINISTRATION

80 Industrial Way **Wilmington, Mass.** **(617) 944-6555**

SPACE CODES (Proportional Space)

The Em, En and Thin space are function codes used for indentions and alignment of type. Although the values remain fixed, they are in proportion to the point size (i.e., when the point size is changed, the Em, En and Thin space will change in value to the new point size).

Em Space

The Em space, normally equal to the square of the point size, is 18 units wide. It is used for paragraph indentions and for the alignment of text and tabular composition.

Exercise:

Inserting any one of the available type styles, set the following copy as indicated in the markup. When complete, note the starting position for each line.

		X36 FL	
F-1 Roman	(6)	COMPUGRAPHIC	/10
	(8)	COMPUGRAPHIC	/12
	(10)	COMPUGRAPHIC	/14
2 Ems	(12)	COMPUGRAPHIC	/16
	(14)	COMPUGRAPHIC	/20
	(18)	COMPUGRAPHIC	/26
	(24)	COMPUGRAPHIC	/32
	(30)	COMPUGRAPHIC	/48

Procedure:

1. Indenting two (2) Em spaces, set the first line.
2. Change the line space to 10 points, Quad Left, Return code.
3. Repeat the procedure for each line. Remember to change the Line Space for each new point size.
4. End the tape with a Stop code and process.

Typeset Copy:

COMPUGRAPHIC
COMPUGRAPHIC
COMPUGRAPHIC
COMPUGRAPHIC
COMPUGRAPHIC
COMPUGRAPHIC
COMPUGRAPHIC
COMPUGRAPHIC

En Space

The En space, normally half the value of the Em space (9 units), is equal to the value of a figure and referred to as a figure space. It is generally used for indentions and alignment of figures when setting tabular text composition.

Exercise:

Set the following copy as marked. The column of figures having various amounts, must be aligned and justified to the full measure.

```
                        X15
                       Just.

(12)-F1    12345    12345    12345   /14
            1000     2000     3000
             100      200      300
              10       20       30
               1        2        3
```

Procedure:

1. Type *12345* Insert Space (TTS Quad Center code); type *12345* Insert Space; type *12345* Return code.
2. Type En Space, *1000* Insert Space; En Space *2000* Insert Space; En Space *3000* Return code.
3. Type two (2) En Spaces, *100* Insert Space; two En Spaces *200* Insert Space, two En Spaces *300* Return code.
4. Type three (3) En Spaces *10* Insert Space; three En Spaces *20* Insert Space; three En Spaces *30* Return code.
5. Type four (4) En Spaces *1* Insert Space; four En Spaces *2* Insert Space; four En Spaces *3* Return code.
6. End the tape with a Stop code and process.

Typeset Copy:

12345	12345	12345
1000	2000	3000
100	200	300
10	20	30
1	2	3

Thin Space

The Thin Space, one-third the value of the Em Space (6 units), is also equal to the value of a comma and the period. It is used for indentions and alignment of type when setting tabular composition.

Exercise:

Set the following copy as marked. The column of figures having various amounts, must be aligned and justified to the full meaure. To assign equal value to each column of figures, both the En Space and Thin Space must be inserted for the lesser values. Counting the largest number of characters in each column will help to determine how many figure spaces and Thin Spaces must be inserted to equalize columns.

```
                                X21
                               Just.

(12)-F3   $110,500.00    $4,550.00    $500.00   /14
Bold        1,450.00     2,000.00     150.00
            4,225.00       450.00      35.00
            6,435.00     5,500.00      50.00
              225.00       300.00       2.25
            3,285.00       550.00        .95
```

Procedure:

1. Count the largest number of characters in each column, marking it down over the column (e.g., column 1, 9 figure spaces, 2 thin spaces; column 2, 7 figure spaces, 2 Thin Spaces; column 3, 6 figure spaces, 1 Thin Space). This includes the $ which is also equal to the value of the figure space.
2. Type the first column, Insert Space; type the second column, Insert Space; type the third column, ending with a Return code.
3. Note the number of figures in the next line for the first column (6). Type 3 En Spaces and the figures to equal the total, Insert Space; note the number of figures in the second column (6). Type 1 En Space and the figures to equal the total; note the number of figures in the third column (5). Insert Space, type 1 En space and the figures to equal the total. End the line with the Return code.
4. Repeat the procedure for each line. Remember to equal the value of the period and comma with the Thin Space.
5. End the tape with a Stop code and process.

Typeset Copy:

$110,500.00	**$4,550.00**	**$500.00**
1,450.00	**2,000.00**	**150.00**
4,225.00	**450.00**	**35.00**
6,435.00	**5,500.00**	**50.75**
225.00	**300.00**	**2.25**
3,285.00	**550.00**	**.95**

TTS CODE	FUNCTION
SS/AU/SS	Add Unit (Forward One Unit)

Unit Space

Unit Space is the smallest accessible space on the phototypesetter. A proportional space, it is equal in value to 1/18th of the Em space. It is used for the manual insertion of fine increments of letterspacing between characters in a line.

Exercise:

Set the word "Compugraphic" flush left on the measure as indicated in the markup. Reset the line a second time, inserting a unit of space between all characters in the line.

```
                    X18
(24)-F3     COMPUGRAPHIC   /24
(Unit Space)  C O M P U G R A P H I C
```

Procedure:

1. Type *COMPUGRAPHIC* Quad Left, Return code.
2. Type *C,* add a unit of space (SS/AU/SS), repeating the procedure for each character in the line.
3. End the line with a Quad Left and Return code.
4. Insert two Return codes for additional line space for the next exercise.

Typeset Copy:

COMPUGRAPHIC
COMPUGRAPHIC

One Point Space

The Forward One Point function code inserts a space, fixed in its value, regardless of point size. The one point space (1/72 of an inch) can be used for letterspacing or for the alignment of type.

Exercise:

Using a standard type style (not condensed or extended), set the following copy as marked. Each line will be a different point size. The Forward One Point function will align the starting position for each type size as marked.

X22

```
(12)-F1   1 [1] Photocomposition has many advantages.   /14
                x2
(10)        [1] Photocomposition has many advantages.   /12

 (8)      [ ][1] Photocomposition has many advantages.
```

Procedure:

1. In 12 point, type *"1"* En Space. This will equal the value of 12 points (Em Space)*. Type *Photocomposition has many advantages.*
2. Change to 10 point, 14 points of line space, Quad Left, Return code.
3. Type an Em space (10 points) add two points with the Add One Point function code (SS/AP/SS, SS/AP/SS). Type the line Quad Left, Return code.
4. Type Em Space, En Space in the 8 point type for a total of 12 points. Type the line Quad Left, Return code.
5. End the tape with a Stop code and process.

Typeset Copy:

1 Photocomposition has many advantages.
Photocomposition has many advantages.
Photocomposition has many advantages.

*The Em Space is the square of the point or set size (See page 12).

TTS CODE	FUNCTION
SS/SU/SS	Subtract Unit (Back One Unit)

Subtract Unit

For typographic refinement, the Subtract Unit function subtracts the unit value of 1/18th of the Em from the spacing (escapement) of the character. It is used for character fit (kerning), eliminating space between characters which tend to show excess white space.

Exercise:

Set the word *AWAY* all caps as indicated in the markup. Reset the word a second time, subtracting one unit of space from the *A, W, A.* Try it a third time, subtracting two units of space from each character and compare.

```
X18

(24)-F1 AWAY    /24
```

Procedure:

1. Type *AWAY,* Quad Left, Return code.
2. Type *A,* (SS/SU/SS); type *W,* (SS/SU/SS); type *A,* (SS/SU/SS); type *Y,* Quad Left, Return code.
3. End the tape with a Stop code and process.

Typeset Copy:

AWAY
AWAY
AWAY

Back One Point

The Back One Point function code subtracts one point of space (1/72 of an inch), fixed in its value regardless of point size. Similar to the Subtract Unit function, it is used for typogaphic refinement (kerning), eliminating undesirable excess white space between characters. It is also used for the alignment of type.

Exercise:

Set the following copy as marked, centering each line on the 18 pica measure.

```
                    X18
(24)-F3    TOYOTA   /24
```

Procedure:

1. Type *TOYOTA* Quad Center (SS/QC/SS) Return code.
2. Retype the word subtracting one point of space from every character with the Back One Point function code (SS/SP/SS).
3. Retype the word once again, subtracting two points of space from every character.
4. End the tape with a Stop code and process.

Typeset Copy:

TOYOTA
TOYOTA
TOYOTA

TTS CODE	FUNCTION
SS/VC/SS	Variable Character Compensation
SS/SCXXX/SS	Character Compensation Set

VARIABLE CHARACTER COMPENSATION

Although the phototypesetter is automatically programmed to reduce intercharacter spacing in proportion to the selected point size, there are times when a change in spacing for a type style may be desired. Variation in automatic intercharacter reduction can be made by insertion of the Variable Character Compensation mode. **When accessed, the amount of character compensation must be defined with the Super Shift Set Compensation command.**

Set Compensation

Variation of intercharacter spacing is specified by the Set Compensation command. Reduction of spacing is defined in fixed amounts of points or fractional amounts of one-third or two-thirds of a point. Three digits must be entered at all times.

Example:

SS/SC000/SS	No Character Compensation
SS/SC001/SS	One-third of a point Character Compensation
SS/SC002/SS	Two-thirds of a point Character Compensation
SS/SC011/SS	One and One-third point Character Compensation
SS/SC012/SS	One and Two-thirds point Character Compensation
SS/SC010/SS	One Point Character Compensation
SS/SC020/SS	Two Points Character Compensation

The Compensation remains in affect until restored by the Automatic Compensation Super Shift command (SS/AC/SS) or by operation of the Reset switch on the Control Panel.

Exercise:

Set the following copy as marked. Reset the line reducing intercharacter spacing by one-third, two-thirds and one point. Set the line again without compensation. Repeat the exercise for each point size. When complete, remember to restore the system to the normal mode of operation.

X45

FL

(12)-F1 Photocomposition has many advantages. /14

(18)-F1 Photocomposition has many advantages. /20

(24)-f1 Photocomposition has many advantages. /26

Procedure:

1. Set the 12 point line in the normal mode, Quad Left, Return code.
2. Change to the Variable Compensation mode of operation by inserting the command (SS/VC/SS).
3. Define the compensation value to one-third of a point. (SS/SC001/SS). Reset the line, Quad Left, Return code.
4. Define the compensation value to two-thirds of a point (SS/SC002/SS). Reset the line, Quad Left, Return code.
5. Define the compensation value to one point (SS/SC010/SS). Reset the line Quad Left, Return code.
6. Define the compensation value to zero (no reduction) SS/SC000/SS. Reset the line Quad Left, Return code.
7. Repeat the procedure for each point size.
8. End the tape with a Stop code and process.

Typeset Copy:

Photocomposition has many advantages.
Photocomposition has many advantages.
Photocomposition has many advantages.
Photocomposition has many advantages.

Photocomposition has many advantages.
Photocomposition has many advantages.
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Automatic Leaders

A leader, used as a guide for reading of text across a line, can be inserted by tape command. The Insert Leader command can be inserted without limitation and the Leader lines will be equally divided for each section of the line. The leader image will be a period in the style and point size selected, with nine (9) units of space between each leader image. Any remaining deficit in the line less than nine units will be placed between the text and the first leader image. **The Insert Leader command is a justifying function and all lines must end with the Return code.**

Exercise:

Set the following copy inserting leader lines as shown. If multiple coding for the Super Shift Insert Leader command is not available on the keyboard, type the command with the Super Shift, alpha characters "i", "l", Super Shift.

```
                                   X30
                                  Just.

(12)-F3   Name of Customer ..............................  /18
Bold
          Representative ...............................

          Address ....................Phone ..............

          City ..........State ............Zip ............

          ..............................................

          ..............................................

          ..............................................

                                  Signed .................
```

Procedure:

1. Insert typesetting functions for the exercise as indicated in the copy markup.
2. Type *Name of Customer*, Insert Leaders (SS/IL/SS), Return code.
3. Type *Representative*, Insert Leaders, Return code.
4. Type *Address*, Insert Leaders, type *Phone*, Insert Leaders, Return code.
5. Type *City*, Insert Leaders, type *State*, Insert Leaders, type *Zip*, Insert Leaders, Return code.
6. Insert Leaders, Return code; Insert Leaders, Return code; Insert Leaders, Return code (3 blank leader lines).
7. Insert 15 Em spaces for the indent from the left margin. Type *Signed*, Insert Leader, Return code.
8. Insert Stop code and process the tape.

Typeset Copy:

Name of Customer .....

Representative .....

Address ..... **Phone** .....

City ..... **State** ..... **Zip** .....

.....

.....

.....

Signed .....

Automatic Baseline Rule

Automatic Baseline Rules can be inserted with the Insert Rule command (Super Shift, IR, Super Shift). The rules can be inserted without limitation, being equally divided with insertion of multiple commands. The density of the rule will be in proportion to the point size, i.e., the smaller the point size, the lighter the rule. When the rule is inserted without text, it will center on the full measure filling the line with rules, with any minor remainder being equally divided on each side of the rule. When inserted with text, the line will justify and minor remainder inserted between the text and the first rule image. **Insert Rule is a justifying function and all lines must be ended with the Return code.**

Exercise:

Inserting typesetting functions as illustrated in the copy markup, set a rule sample of type sizes from 6 to 24 point. Note weight variations of the rules for each point size. It can be inserted in any type style. If the Insert Rule command is not available on the keyboard, type the command with the Super Shift, alpha characters "i, r", Super Shift.

X24

F1 (6) _____ /12

(8) _____

(10) _____

(12) _____

(14) _____

(18) _____

(24) _____

Procedure:

1. Change to point size 6, Insert Rule (SS/IR/SS), Return code.
2. Change to point size 8, Insert Rule, Return code.
3. Change to point size 10, Insert Rule, Return code.
4. Change to point size 12, Insert Rule, Return code.
5. Change to point size 14, Insert Rule, Return code.
6. Change to point size 18, Insert Rule, Return code.
7. Change to point size 24, Insert Rule, Return, Return, Return, Stop code.

Typeset Copy:

Example:

Set the following, inserting the Baseline Rule where illustrated, in the copy markup.

X30

(18)-F3
Bold
(10)-F1

Form No. 1 /6

/18

Light
Roman

Name of Customer _____

Representative _____

Address _____ Phone _____

City _____ State _____ Zip _____

_____

_____

_____

Signed _____

Signed _____

Procedure:

1. Insert typesetting functions as indicated in the copy markup.
2. Type *Form No. 1*, Quad Center (SS/QC/SS) Return code.
3. Change to 10 point, light face Roman, 18 point line space. Insert Rule (SS/IR/SS), Return code.
4. Type *Name of Customer*, Insert Rule, Return code.
5. Type *Representative*, Insert Rule, Return code.
6. Type *Address*, Insert Rule; type *Phone*, Insert Rule, Return code.
7. Type *City*, Insert Rule; type *State*, Insert Rule; type *Zip*, Insert Rule, Return code.
8. Insert Rule, Return code; Insert Rule, Return code; Insert Rule, Return code.
9. Type *Signed*. Manually insert fifteen Baseline Rules. This is accomplished with the precedence codes, Em precedence/Elevate (025/2). (See Keyboard Arrangements, page 168-172.) End the line Quad Right (SS/QR/SS), Return code. Repeat the procedure for the line that follows.
10. End the tape with a Stop code and process.

Typeset Copy:

Form No. 1

Name of Customer _____

Representative _____

Address _____ Phone _____

City_____ State_____ Zip_____

_____

_____

_____

Signed_____

Signed_____

OPTIONAL LINE SPACE

To obtain the many variations in line space for typesetting lines to prescribed layouts, additional Line Space functions are available on the phototypesetter. They are as follows:

End Line (Zero Line Space)
Additional Line Space
Reverse Line Space

TTS CODE	FUNCTION
SS/EL/SS	End Line (Zero Line Space)

End Line

The End Line function command prevents the advancement of photographic material. A facsimile of the Return code, it activates the typesetting of the line but inhibits advancement of the Preset Line Space. **It is a justifying function** and can be used with all line ending commands (Quadding, Insert Leaders, Rules, etc.) for the positioning of typeset copy. When the End Line function is activated, the line will be photographed, the next line set will be positioned on the same baseline.

Exercise:

A column, with variable type values, can be aligned by use of the End Line function command. Set the following text as indicated in the copy markup.

```
                                X21
    (10)-F3          ADVANTAGES OF PHOTO COMPOSITION  /16
    Bold
(10)-F1  FL   a.     Versatility  /12
Roman         b.     Wide rnage of styles and sizes
              c.     Unlimited mixing for styles and sizes
              d.     Easier to compose
              e.     Area composition
      Bold —  f.     Faster production
              g.     Copy fitting simplified
              h.     Better typography
              i.     Long line lengths
              j.     Economical
```

Procedure:

1. Set the first line of copy Quad Center on the line measure.
2. Change to 10 point bold, type *"a"*, Quad Left, End Line (SS/EL/SS). The *"a"* will be positioned on the left margin without the advancement of photographic material.
3. Change to the light face Roman type.
4. Insert an Em and En space. Type the remainder of the line *Versatility*, Quad Left, Return code.
5. Repeat the procedure for each line, maintaining the baseline for the key characters (a to j) with the End Line command.
6. End the tape with a Stop code and process.

Typeset Copy:

ADVANTAGES OF PHOTO COMPOSITION

a. Versatility
b. Wide range of styles and sizes
c. Unlimited mixing for styles and sizes
d. Easier to compose
e. Area composition
f. Faster production
g. Copy fitting simplified
h. Better typography
i. Long line lengths
j. Economical

Exercise:

The End Line function command is often used to position type for area composition. Set the following copy as indicated in the markup.

```
                                  X42

                  (24)    (18)    (24) (18)
                   |  [_________]   |  [_____]
(24)  (18)-F3     Compugraphic Corporation    /12
Demibold
(10)
                     80 Industrial Way     FR Telephone [1]

Set All Caps      Wilmington, Mass. 01887        617-944-6555
```

Procedure:

1. Set *COMPUGRAPHIC CORPORATION* all caps in 24 and 18 point, Quad Center on the measure (SS/QC/SS), Return code.
2. Change to 10 point, type *80 INDUSTRIAL WAY,* Quad Center, (SS/EL/SS).
3. Type *Telephone*, Em space, Quad Right (SS/QR/SS), Return code.
4. Type *WILMINGTON, MASS. 01887,* Quad Center (SS/QC/SS), End Line (SS/EL/SS).
5. Type *(617) 944-6555*, Quad Right (SS/QR/SS), Return code.
6. End the tape with a Stop code and process.

Typeset Copy:

COMPUGRAPHIC CORPORATION
80 INDUSTRIAL WAY
WILMINGTON, MASS. 01887

Telephone
(617) 944-6555

Add Line Space (Repeat Line Space)

Additional Line Space can be inserted at any point in a line with the *Super Shift Line Space command. When accessed, it will repeat the advancement of photographic material the value of the Preset Line Space as stored with the Set Leading command. The additional line space can be inserted without limitation. It does not affect characters, and typesetting of the line can be continued.

Exercise:

A stepping affect can be created by the insertion of Line Space within the line. Set the following copy as indicated in the markup.

```
                                X45

(24)-F3   Economy[]                                  /24
Bold                Versatility[]
                                     Production
```

*Not to be confused with "Set Leading" command (SS/SLXXX/SS).

Procedure:

1. In 24 point, type *Economy* En Space.
2. Insert Line Space (SS/LS/SS).
3. Type *Versatility* En Space.
4. Insert Line Space (SS/LS/SS).
5. Type *Production*, Quad Center (SS/QC/SS), Return code.
6. Insert two more Return codes to provide additional space to set the next exercise.

Typeset Copy:

Economy

Versatility

Production

TTS CODE	FUNCTION
SS/OP/SS	One Point Line Space
SS/HP/SS	Half Point Line Space

One Point/Half Point Line Space

Additional Line space in **one point or *half-point increments** can be added at any position in a line. Either function can be inserted without limitation, advancing the photographic material each time the code is activated by the Return code. This space is in addition to the Preset Line Space and when inserted between paragraphs or blocks of copy, it is recommended that the function be inserted prior to the Return code. If not, the function could be canceled during a correction and would have to be reinserted.

Exercise:

The following calls for four (4) points of additional line space between each block of names. Set the copy as indicated in the markup.

***Note:** The half point line space is inserted in the same manner as the one point function.

```
                X15

(10)-F7  OFFICERS    /12

 (8)-F1  John Baker   /8/12
     F2    [1] Board Chairman
           William Brennan
             [1] Vice Chairman
           Charles Lange
             [1] Administrator
           Walter Felts
             [1] Treasurer
           Wilson Havoline
             [1] Secretary
```

Procedure:

1. In 10 point bold type, 8 point Line Space, set *OFFICERS.*
2. Add four points of Line Space by inserting the One Point Line Space code four (4) times (SS/OP/SS), Quad Left, Return code.
3. Change to 8 point and the medium style, type *John Baker,* Quad Left, Return code.
4. Change to an italic style, type Em Space, *Board Chairman.*
5. Add four (4) points of Line Space (SS/OP/SS). Quad Left, Return code.
6. Repeat the procedure for each block, inserting additional space after each title.
7. End the tape with a Stop code and process.

Typeset Copy:

OFFICERS

John Baker
Board Chairman

William Brennan
Vice Chairman

Charles Lange
Administrator

Walter Felts
Treasurer

Wilson Havoline
Secretary

Forward Leading (Forward Line Space)

An additional Line Space function, the Super Shift Forward Leading command advances the photographic material by a selected value from 0 to 99 points. It is used to provide a secondary line space without affecting the Preset Line Space as stored with the Set Leading Command. This spacing is in addition to the Preset Line Space and when inserted between paragraphs or blocks of copy, it is recommended that the function be inserted prior to the Return code. It is automatically cancelled after each activation.

Exercise:

Set the following manuscript as indicated in the copy markup. Note that the Forward Leading command is used to provide additional line space for each illustration without affecting the normal set line space function.

```
                                X21

                                                    CG 7200      /16
                                Just.
(10)-F1   Introduced in 1968, the 7200 is a direct keyboard      /11
          entry display phototypesetter. A typewriter key-
          board access 102 alpha-numeric characters including
          miscellaneous and superior figures. Two models are
          available; a low range machine with a point size
          range of 14 to 72 point and a high range machine that
          sets 30 to 120 point. Four type styles are immediately
          accessed for fast quality typesetting of heads and
          display composition.                                   /85
                                illustration
                  (6)-F2   High Range                            /24

                                          COMPUWRITER I & JR.    /16
                                Just.
          The CompuWriter I phototypesetter, introduced in       /11
          1971, operates with a direct-entry counting type-
          writer keyboard. Type sizes of 5 1/2 to 24 point can
          be accessed in four styles. The system provides
          manual or automatic justification of lines.
          Basically the same system as the CompuWriter I,
          type styles for the CompuWriter Jr. are specially
          designed. The economical CompuWriter was intro-
          duced in 1973.                                         /85
                                illustration
                  (6)-F2   CompuWriter I                         /24
```

Procedure:

1. Set *CG 7200* in 12 point bold, 16 point line space, Quad Right on the measure (SS/QR/SS) Return code.
2. Change to 10 point light face, 11 point line space.
3. Set the paragraph, ending with the Quad Left and Return code.
4. Type SS/FL850/SS. This will advance the photographic material an additional 85 points for a total line space of 96 points (11 plus 85).
5. Change to 6 point italic type, 24 point line space. Type the caption *High Range,* Quad Center on the measure (SS/QC/SS), Return code.
6. Repeat the procedure for each paragraph.
7. End the tape with a Stop code and process.

Typeset Copy:

CG 7200

Introduced in 1968, the 7200 is a direct keyboard entry display phototypesetter. A typewriter keyboard access 102 alpha numeric characters including miscellaneous and superior figures. Two models are available; a low range machine with a point size range of 14 to 72 point and a high range machine that sets 30 to 120 point. Four type styles are immediately accessed for fast quality typesetting of heads and display composition.

High Range

COMPUWRITER I & JR.

The CompuWriter I phototypesetter, introduced in 1971, operates with a direct-entry counting typewriter keyboard. Type sizes of 5½ to 24 point can be accessed in four styles. The system provides manual or automatic justification of lines.

Basically the same system as the CompuWriter I, type styles for the CompuWriter Jr. are specially designed. The economical CompuWriter Jr. was introduced in 1973.

CompuWriter I

Reverse Line Space

Reverse line space, equal to the value of Preset Line Space as stored with the Set Leading command, can be inserted at any position in a line. **All Reversing of Line Space is limited to a maximum value of 72 points.**

Exercise:

A reverse stepping affect can be created by the insertion of Reverse Line Space within a line. Set the following copy as indicated in the markup.

```
                    X45

(24)-F3                                  Production   /24
Bold
                    Versatility□

          Economy□
```

Procedure:

1. In 24 point, type *Economy* En Space.
2. Insert Reverse Line Space (SS/RS/SS).
3. Type *Versatility* En Space.
4. Insert Reverse Line Space (SS/RS/SS).
5. Type *Production*, Quad Center, Return code.
6. End the tape with a Stop code and process.

Typeset Copy:

Production

Versatility

Economy

TTS CODE	FUNCTION
SS/RO/SS	Reverse One Point Line Space
SS/RH/SS	Reverse Half Point Line Space

One Point/Half Point Reverse Line Space

Reversing of line space can be accomplished in one point or half point increments. Either function can be inserted at any position in a line, limited to 72 points at any one time. If either function code is canceled during a correction, it must be reinserted.

Exercise:

Set the following copy as shown in the markup. Three Line Space functions must be used to position the typeset copy as illustrated.

Note: The half-point reverse line space is inserted in the same manner as the one point reverse function.

```
                                X24

(24)  (12)        CG  /6                AUTOMATIC          /16
Bold  Light                  4 Ems      HIGH SPEED
                                        PHOTOTYPESETTERS
```

Procedure:

1. In 24 point bold, 16 points of line space, type *C*.
2. Forward Line Space six (6) points (SS/FL060/SS), advancing the photographic material 6 points.
3. Type *G*. Reverse Line Space six (6) points (SS/RO/SS). Inserting the code six (6) times. Quad Left, End Line (SS/EL/SS).
4. Change to 12 point and a light face type style.
5. Insert four (4) Em spaces, type *AUTOMATIC*. Quad Left, Return code.
6. Insert four (4) Em spaces, type *HIGH SPEED*, Quad Left Return code.
7. Insert four (4) Em spaces, type *PHOTOTYPESETTERS*, Quad Left, Return code.
8. End the tape with a Stop code and process.

Typeset Copy:

CG AUTOMATIC
HIGH SPEED
PHOTOTYPESETTERS

Reverse Leading

The Reverse Leading command reverses the photographic material up to the maximum value of 72 points. It provides a reverse secondary line space without affecting Preset Line Space as stored with the Set Leading command. Three digits must be entered at all times. The Reverse Leading command is automatically cancelled after each insertion of the function code.

Exercise:

The Reverse Leading command can be used to position type into areas. Set the following as indicated in the marked copy. Note that Preset Line Space does not change for the complete exercise.

```
                                X36

(18)-F7     LEADING HEADLINE PHOTOTYPESETTER   /24

                 X21
(14)   CG 7200   /14

                 Just.

(10)-F1  Introduced in 1968, the 7200   /12
         is a direct keyboard entry pho-
         totypesetter. A typewriter
         keyboard accesses 102 alpha-
         numeric characters in four
         styles. Two models are avail-
         able; a low range and a high
         range. For fast quality type-
         setting of headlines . . .try
         the popular 7200.
```

```
FR   X36
(12) Eight (8) Sizes   /24
F2
     Four (4) Styles

     102 Alphanumeric
     Characters
```

Procedure:

1. In 18 point bold type, 12 points of line space, set the first line quad center on the 36 pica measure (SS/QC/SS), Return code.
2. Insert an extra Return code to provide the 24 points of line space as indicated in the copy.
3. Change the line measure to 21 picas (SS/SM2100/SS).
4. Change to 14 point type and center *CG 7200* on the 21 pica measure (SS/QC/SS), Return code.
5. Add two (2) additional points of line space (SS/OP/SS SS/OP/SS) for 14 points of line space between the subhead and the 10 point descriptive text.
6. Change to 10 point light face, type the paragraph.
7. End the paragraph Quad Left, End Line (SS/EL/SS). This will prevent line space on the last line of the paragraph, remaining on the same baseline.
8. **Reverse leading 48 points** (SS/RL480/SS).
9. Change the line measure to 36 picas, 12 point italic type.
10. Type the first line of the italic copy *Eight (8) Sizes,* Quad Right (SS/-QR/SS) Return, Return. Doubling the 12 points of line space to 24 points as indicated in the markup.
11. Repeat the procedure for the next two lines.
12. End the tape with a Stop code and process.

Typeset Copy:

LEADING HEADLINE PHOTOTYPESETTER

CG 7200

Introduced in 1968, the 7200 is a direct keyboard entry display phototypesetter. A typewriter keyboard accesses 102 alphanumeric characters in four styles. Two models are available; a low range and a high range. For fast quality typesetting of headlines . . . try the popular 7200

Eight (8) Sizes

Four (4) Styles

102 Alphanumeric Characters

TTS CODES	FUNCTION
SS/SO/SS	Space Only (No Flash)
SS/SX/SS	Space Only Off (Restore Flash Mode)

Space Only (No Flash)

In normal operation, character images are flashed, followed by the spacing (escapement) for the width of the characters. When the Super Shift function command Space Only (SS/SO/SS) is accessed, only the width value of the characters is obtained, thereby allowing space equal to the width value of the characters. **The Space Only function remains in affect for all characters until restored to the regular mode of operation.**

Space Only Off (Restore Flash Mode)

The Space Only Off command (SS/SX/SS) restores the regular operating mode for the flashing of characters when the Space Only function, as previously described, has been activated. The regular mode of operation is also restored with the activation of the Reset switch on the Control Panel.

Exercise:

The Space Only function can be used for the positioning of text in various forms of composition. Set the following copy as marked. It is important to remember that the Space Only function remains in affect until restored to the flash mode.

```
                    X45

                (12)-F1    LOW-COST     /12
                           HIGH QUALITY
(48)-F3    COMPUGRAPHIC    PHOTOTYPE
```

Procedure:

1. Access the functions as indicated in the markup (45 Picas, Point Size 48, Typeface Bold, Line Space 12 points).
2. Insert the Space Only command (SS/SO/SS).
3. Type *COMPUGRAPHIC.*
4. Insert the Space Only Off command (SS/SX/SS).
5. Change to 12 point medium. Type En Space, *LOW-COST,* Quad Left, Return code.
6. Change to 48 point bold. Insert the Space Only command. Again type *COMPUGRAPHIC.*
7. Insert Space Only Off command.
8. Change to 12 point medium. Type En Space, *HIGH QUALITY,* Quad Left, Return code.
9. Change to 48 point bold. Set *COMPUGRAPHIC.* Change to 12 point medium, type En Space, *PHOTOTYPE,* Quad Left, Return code.
10. End the tape with a Stop code and process.

Typeset Copy:

COMPUGRAPHIC LOW-COST HIGH QUALITY PHOTOTYPE

Exercise A:

The Space Only command can be used for various styles of area composition. Set the following copy as marked, centering all typeset copy on the measure, with the short line centered over the long description line.

```
                    X18

(10)-F1    ALL GOODS   /12
        THIS MONTH ONLY   $5.00
```

Exercise B:

Reset the exercise with the longest line being the first line of the text copy.

```
                    X18

(10)-F1    THIS MONTH ONLY   /12
             ALL GOODS     $5.00 (24)-F3
```

Procedure A:

1. In 10 point type, set *ALL GOODS,* followed by an Em Space for spacing between the text and the 24 point bold price.
2. Insert the Space Only function (SS/SO/SS). Set the 24 point bold price *$5.00,* Quad Center, Return code.
3. Restore the Flash mode (SS/SX/SS). Change to 10 point type and set *THIS MONTH ONLY,* Em Space.
4. Change to 24 point bold type, set *$5.00,* Quad Center, Return code, Return code, Return code.

Typeset Copy:

ALL GOODS
THIS MONTH ONLY **$5.00**

Procedure B:

1. In 10 point type set *THIS MONTH ONLY* followed by an Em Space.
2. Insert the Space Only function (SS/SO/SS) and set the 24 point bold price, Quad Center, Return code.
3. Restore the Flash mode (SS/SX/SS). Change to 10 point type and set *ALL GOODS,* Em Space.
4. Insert the Space Only function and again set the 24 point bold price, Quad Center, End Line (no line space).
5. Change to 10 point, again type *THIS MONTH ONLY,* Em Space.
6. Restore the Flash mode. Change to 24 point bold, set the price, Quad Center, Return code.
7. End the tape with a Stop code and process.

Typeset Copy:

THIS MONTH ONLY
ALL GOODS **$5.00**

TTS CODE	FUNCTION
SS/OF/SS	Flash Only

Only Flash (Zero Width)

As previously described, character images are flashed followed by the spacing (escapement) for the width of the characters. When the Super Shift function command Only Flash (SS/OF/SS) is accessed, only the flashing of the character is obtained, there is no escapement. When setting another image, it will superimpose directly on top of the previous character. This is avoided by assigning or allowing fixed space or variable spacing for the character. **The function is used once for individual characters and is automatically restored to normal.** It is used to position type into specific areas.

Exercise A:

Set the following copy as shown in the markup. Note that the *Lb.* is set on the same baseline as the price and directly underneath the ¢ sign which is superior.

```
                X18

(48)-F3      45¢
(10)-F1        Lb.
```

Exercise B:

The Only Flash function can be used for other forms of area composition. Set the following copy as indicated in the markup. Note that alignment of the figures can be maintained by using the Only Flash function for the alpha characters.

```
                X12
               Just.

(10)-F1  12345    12345    12345    12345    /12

          2345    12345a    2345     2345

           345a    345b     345c     345
```

Procedure A:

1. Set the 48 point figures *45.*
2. Access the Only Flash function (SS/OF/SS).
3. Type the **superior** *"¢"* sign.
4. Change to 10 point type and set *Lb.,** Quad Center, Return code.

*For better copy fit, fixed space can be added or subtracted between the price and the text *Lb.*

Typeset Copy:

45¢ Lb.

Procedure B:

1. Set the first column *12345,* Insert Space; set the second column, Insert Space; set the third column, Insert Space; set the fourth column, Return code.
2. Set the second line inserting an En Space for alignment of figures in the first column; Insert Space.
3. Set the second column. Access the Only Flash function (SS/OF/SS) and type the *"a"*, Insert Space.
4. Type the third column, Insert Space; the four column, Return code.
5. Repeat the procedure for the next line. Remember to access the Only Flash function for each alpha character to maintain the alignment of figures.
6. End the tape with a Stop code and process.

Typeset Copy:

12345	12345	12345	12345
2345	12345a	2345	2345
345a	345b	345c	345

Exercise C:

Set the following copy as indicated in the markup. The asterisk will be inserted beyond the measure and into the margin.

```
                    X21
        (18)-F3   SALE   /16
                                          F-3
(12)-F1  Sport Coats ....................$21.50  /16
         Suits ........................ 89.50*
         Top Coats ..................... 45.00
         Rain Coats .................... 38.00*
 (8)-F1  *This week's special.
```

Procedure C:

1. Set the word *SALE* 18 point, centered on the measure.
2. Change to 12 point light. Type *Sport Coats,* Insert Leaders. Change to bold type and set the price *$21.50,* Return code.
3. Change to the light style and set *Suits,* Insert Leaders. Change to the bold style, insert an En Space, set the price *89.50.* Access the Only Flash command and set the asterisk. It will be positioned into the margin. End the line with a Return code.
4. Repeat the procedure for each line with the asterisk.
5. End the tape with a Stop code and process.

Typeset Copy:

SALE

Sport Coats..... **$21.50**
Suits..... **89.50***
Top Coats..... **45.00**
Rain Coats..... **38.00***

*This week's special.

TTS CODES	FUNCTION
SS/TBX/SS	Define Tab/Call Tab
SS/STXXXX/SS	Set (Tab Position)
SS/SMXXXX/SS	Tab Measure
SS/CR/SS	Carriage Reset (Restores original measure)

TABBING (Multiple Columns)

Eight variable tab columns, within the overall line measure of 45 picas, can be established by tape command. Defined by the operator, the tab column can be accessed in any sequence when referenced to starting positions and tab line measures. All phototypesetting functions can be accessed within tab segments. A Cancel Line command when used within a tab column, only affects the immediate column, since all previous data in tab columns have been completed and photographed.

Tab columns are defined with the following three elements:

1. Tab Number (1 to 8) SS/TBX/SS.
2. Set Tab (tab position, defined in picas and point in relation to the left margin) SS/STXXXX/SS.
3. Tab Measure (the width of the column in picas and points) SS/SMXXXX/SS.

The tab column is activated by a Call Tab (1 to 8) SS/TBX/SS. When called, the tab position remains in affect until changed or restored to the overall measure line by the Carriage Reset command (SS/CR/SS).

Example: One Tab Column

Function Codes:

SS/TB1	ST0000	SM0800	TB1/SS
Define Tab 1	Tab Position	Tab Measure	Call Tab

Example: Two Tab Columns

Tab No. 1: Set measure, 8 picas.

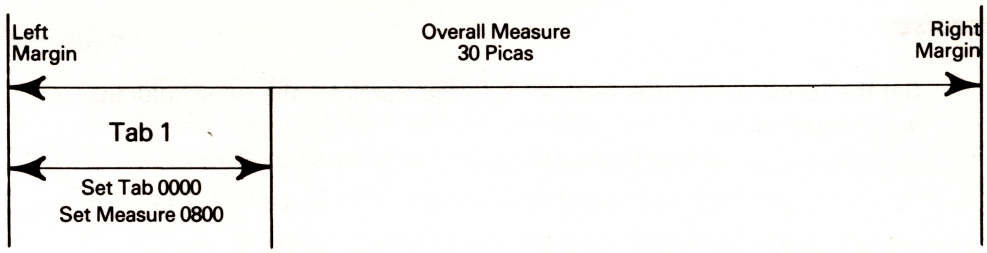
Tab No. 2: Set tab, 8 picas (width of tab 1); Set measure, 10 picas.

Example: Three Tab Columns

Tab No. 1: Set measure, 8 picas.

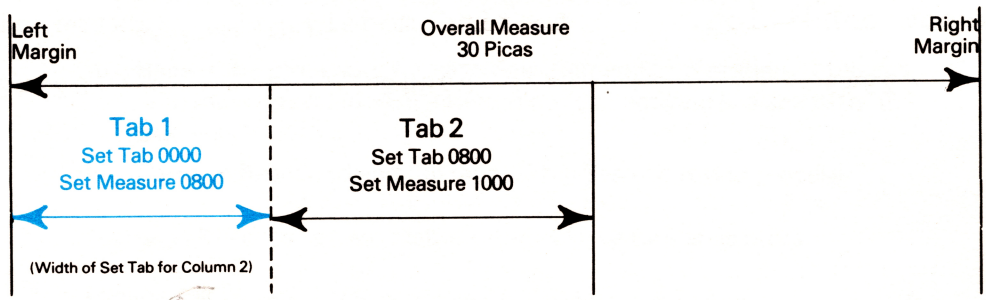
Tab No. 2: Set tab, 8 picas (width of tab 1); Set measure, 10 picas.

Tab No. 3: Set tab, 18 picas (total widths of tabs 1 and 2); Set measure 12 picas.



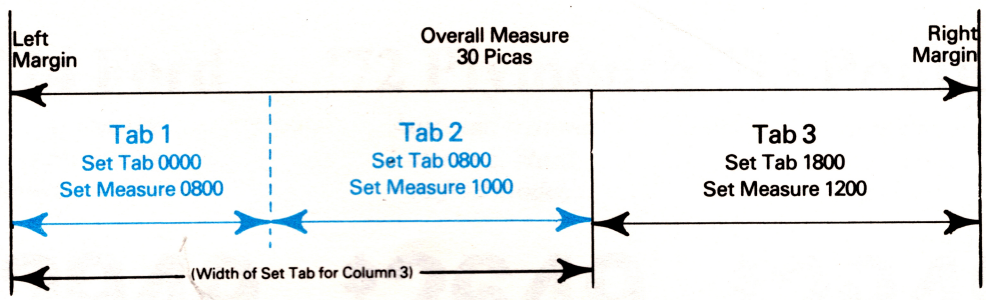
Function Codes:

SS/TB1/ST0000/SM0800/SS



Function Codes:

SS/TB1/ST0000/SM0800/TB2/ST0800/SM1000/SS



Function Codes:

SS/TB1/ST0000/SM0800/TB2/ST0800/SM1000/TB3/ST1800/SM1200/SS

Exercise:

Set the following copy as marked. Line measures for the three columns are of equal value.

X36

(30)-F3 THIS WEEK'S SPECIALS /36

	X12	X12		
(24)-F3	'74 Ford	'72 Plymouth	'73 Pontiac	/16
(10)-F2	Automatic. Low mileage. Showroom condition.	Automatic, power steering. Hard to find model.	Automatic. Power steering. Extra clean	/12 /54
(48)-F3	$2949	$2649	$2949	

Procedure:

1. Insert typesetting parameters as indicated in the markup.
2. Set Tab One (SS/TB1/ST0000/SM1200/TB1**/SS).
3. Set Tab Two (SS/TB2/ST1200/SM1200/TB2/SS).
4. Set Tab Three (SS/TB3/ST2400/SM1200/TB3/CR*/SS).
5. Set the 36 point head line *THIS WEEK'S SPECIALS,* Quad Center on the measure.
6. Change to 24 point type and 24 point line space. Call Tab 1 (SS/TB1/SS). Set *'74 Ford,* Quad Center on the measure, Tab 2 (SS/QC/TB2/SS).
7. Set *'72 Plymouth,* Quad Center, Tab 3 (SS/QC/TB3/SS).
8. Set *'73 Pontiac,* change to 10 point type, type style 2, line space to 12 point, Quad Center, Return code.
9. Call Tab 1, set *Automatic,* Quad Center; Tab 2, set *Automatic, power,* Quad Center; Tab 3, set *Automatic,* Quad Center, Return code, call Tab 1.
10. Repeat the procedure for each line. Remember that the last tab column must be ended with a Return code to activate line space for the next line.
11. Carriage Reset and end the tape with a Stop code and process.

*Carriage Reset command restores original measure of 36 picas.

**Calling in the tab will lock in the tab function preventing cancellation if a correction has to be made.

Typeset Copy:

THIS WEEK'S SPECIALS

'74 Ford	'72 Plymouth	'73 Pontiac
Automatic. Low mileage. Showroom condition.	*Automatic, power steering. Hard to find model.*	*Automatic. Power steering. Extra clean.*
$2949	**$2649**	**$2949**

Exercise:

Set the following copy as marked. Tab number two must be positioned to allow for a two pica gutter between the leaders in tab one and the figures in tab position two. The Carriage Reset function is inserted to restore the overall measure for placement of rules.

X38

(12)-F1 2/10

	X16	X2	X6 Price to Public	X8 Underwriting Discounts and Commissions	X6 Proceeds to Company
(8) (12)					4/12
(10)	Per Unit		100%	NONE	100%
(12)	Total		$999,600	NONE	$999,600

Procedure:

1. Access typesetting functions as indicated in the markup.
2. Set tab one (SS/TB1/ST0000/SM1600/TB1/SS).
3. Set tab two (SS/TB2/ST1800/SM0600/TB2/SS).
4. Set tab three (SS/TB3/ST2400/SM0800/TB3/SS).
5. Set tab four (SS/TB4/ST3200/SM0600/TB4/CR/SS).
6. In 12 point, Insert Rule with 2 point line space (SS/IR/SS/Return code).
7. Change to 10 point line space, insert a second rule.
8. Change to 8 point, call tab 3 (SS/P08/TB3/SS).
9. Center *Underwriting*, Quad Center, Return code.
10. Call tab two, set *Price to*, Quad Center, tab 3.
11. Set *Discounts and*, Quad Center, tab 4.
12. Set *Proceeds to*, Quad Center, Return code.
13. Call tab 2, set *Public*, Quad Center, tab 3.
14. Set *Commissions*, Quad Center, tab 4.
15. Set *Company*, Quad Center, 4 points additional line space, End Line/Carriage Reset (SS/QC/opopopop/EL/CR/SS).
16. Change to 12 point type and 12 point line space, insert a rule (SS/P12/SL120/IR/SS, Return code).
17. Change to 10 point type, call tab 1.
18. Set *Per Unit*, Insert Leaders (SS/IL/SS), tab 2; set *100%*, Quad Center, tab 3; set *NONE*, Quad Center, tab 4; set *100%*, 4 points additional line space, Quad Center, End Line, Carriage Reset.
19. Change to 12 point type, 12 point Line Space, insert the rule, repeat the procedure for each line.
20. End the tape with a Stop code and process.

Typeset Copy:

	Price to Public	Underwriting Discounts and Commissions	Proceeds to Company
Per Unit.....	100%	NONE	100%
Total	$999,600	NONE	$999,600

Exercise:

Set the following tabular copy as indicated in the markup. Tab one will be justified with leaders. The data for tab positions two and three will be aligned on the right margin of the tab columns. This eliminates the need to insert fixed spaces for the alignment of the variable amounts in each column. It is recommended, although not always necessary, that all typesetting functions, including tabs, be inserted before operating.

X38

(12)-F3 COMPANY SUBSIDIARIES /18

BALANCE SHHET

ASSETS

X26	X6	X6	
	(8) 1974	1973	/3 /12
(10)-F1 Current Assets:			
Cash	$ 21,173,672	$ 10,206,123	
Accounts receivable, less allowances of $52,100 in 1973 and $41,000 in 1972..	11,433,844	11,049,234	
Inventories:			
Finished goods and work in process	21,195,205	11,645,742	
Raw materials	414,185	263,428	
Supplies	1,137,571	965,308	/3
	211,746,961	12,974,478	/12
Deferred income taxes	126,500	115,000	
Prepaid expenses and sundry..	247,583	126,446	
Total current assets	233,428,560	212,271,281	

Procedure:

1. Access typesetting functions as indicated in the markup.
2. Set tab one (SS/TB1, SM2600/*TB1/SS).
3. Set tab two (SS/ST2600/SM0600/TB2/SS).
4. Set tab three (SS/ST3200/SM0600/TB3/CR/SS).
5. Type the first three lines centering them on the overall measure.
6. Change to 8 point type, call tab 2 (SS/TB2/SS).
7. Center the date *1974* on the measure and call tab three (SS/QC/TB3/SS).
8. Center the date *1973* adding 3 points of additional leading, end the line with the Zero Lead function (SS/QC/OPOPOP/EL/SS).
9. Call tab 2 and insert two baseline rules from the keyboard, Quad Center, tab 3 (SS/QC/TB3/SS).
10. Insert Two baseline rules, Quad Center, Return code.
11. Change to 10 point type, call tab one.
12. Set *Current Assets* Flush Left on the measure.
13. Insert one Em Space, type *Cash*, Insert Leaders, tab 2.
14. Set the price *$21,173,672* Quad Right, tab 3.
15. Set the price *$10,206,123,* Quad Right, Return code.
16. Repeat the procedure for each line, remember to add three points for the rule, stopping primary line space with the End Line command.
17. End the tape with a Carriage Reset and Stop code.

*Calling in the tab will lock in the tab function preventing cancellation if a correction has to be made.

Typeset Copy:

COMPANY SUBSIDIARIES
BALANCE SHEET
ASSETS

	1974	1973
Current Assets:		
Cash	$ 21,173,672	$ 10,206,123
Accounts receivable, less allowances of $52,100 in 1973 and $41,000 in 1972	11,433,844	11,049,234
Inventories:		
Finished goods and work in process	21,195,205	11,645,742
Raw materials	414,185	263,428
Supplies	1,137,571	965,308
	211,746,961	12,974,478
Deferred income taxes	126,500	115,000
Prepaid expenses and sundry	247,583	126,446
Total current assets	233,428,560	212,271,281

AUTOMATIC TAB

Eight variable tab positions with measures, can be automatically defined at any point in a line. When inserted, the Auto Tab starting position is established at the next flashable character or fixed space after calculation for quadding or justification of the line. A line measure equal to the deficit for the tab position will be inserted (total line measure minus the amount of indent from the left margin). The tab position is then accessed with the Call Tab command and the assigned tab number (SS/TBX/SS).

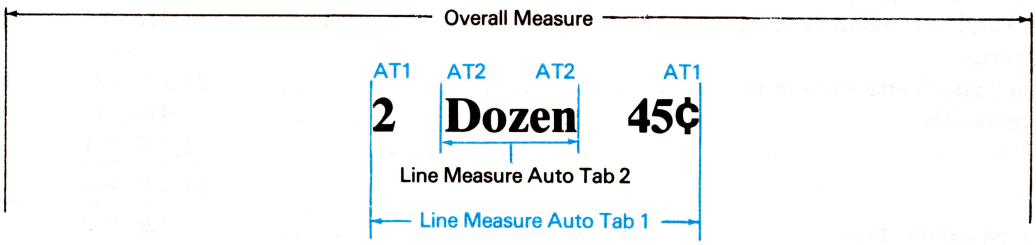
Example:

Example:

An Auto Tab measure can be defined equal to the value of copy block between Auto Tab designations of the same Auto Tab number.

Example:

Auto Tab measures can also be established within another Auto Tab.



Example:

Electric Power Company

First Mortgage Bonds, Series M

Due August 1, 2005

**(IS) *AT1 Haliday, Stuart & Co., Inc. AT1 (IS) AT2 Laine, Webber & Blackstone AT2 (IS)

Affiliate of Black Co.

AT Line Measure

Incorporated

AT Line Measure

AT3 Schmidt, Larney & Co. AT3 (IS) AT4 Weeken & Co. AT4 (IS) AT5 Randy & Farnestock Co. AT5

Incorporated

AT Line Measure

Incorporated

AT Line Measure

Incorporated

AT Line Measure

*AT — Auto Tab
**IS — Insert Space

Exercise:

The Auto Tab can be obtained at any place in a line with line measures equal to typeset copy. The following names must be equally centered on the measure with descriptive titles centered on each name. Set the copy as marked.

X36

(18)-F3 Electric Power Company /18

(12) First Mortage Bonds, Series M /12

(8) Due August 1, 2005 /24

(10)-F1 Haliday, Stuart & Co., Inc. Laine, Webber & Blackstone 10/30
(8) Affiliate o Black Co. Incorporated

Schmidt, Larney & Co. Incorporated

Weeken & Co. Incorporated

Randy & Farnestock Co. Incorporated

Procedure:

1. Center the first three lines as indicated in the 36 pica measure.
2. Change to 10 point type, Insert Space, Auto Tab 1 (SS/AT1/SS). Set *Haliday, Stuart & Co., Inc.*, Auto Tab 1 (SS/AT1/SS).
3. Insert Space, Auto Tab 2 (SS/AT2/SS), set *Laine, Webber & Blackstone*, Auto Tab 2 (SS/AT2/SS), Insert Space, Return code.
4. Change to 8 point type. Call Tab 1 (SS/TB1/SS). Set *Affiliate of Black Co.,* Quad Center, Call Tab 2 (SS/TB2/SS). Set *Incorporated*, Quad Center, Return code, Return code, Return code for 30 points of line space between copy blocks, Carriage Reset.
5. Change to 10 point type, Auto Tab 3 (SS/AT3/SS). Set *Schmidt, Larney & Co.*, Auto Tab 3; Insert Space, Auto Tab 4, set *Weeken & Co.*, Auto Tab 4; Insert Space, Auto Tab 5, set *Randy & Farnestock Co.*, Auto Tab 5; Return code.
6. Change to 8 point. Call Tab 3, set *Incorporated*, Quad Center; Tab 4, set *Incorporated*, Quad Center; Tab 5, set *Incorporated*, Quad Center, Return code.
7. End the tape with a Carriage Reset, Stop code and process.

Typeset Copy:

Electric Power Company

First Mortage Bonds, Series M

Due August 1, 2005

Haliday, Stuart & Co., Inc.
Affiliate of Black Co.

Laine, Webber & Blackstone
Incorporated

Schmidt, Larney & Co.
Incorporated

Weeken & Co.
Incorporated

Randy & Farnestock Co.
Incorporated

Exercise:

Set the following copy as indicated in the markup. The descriptive text directly underneath the price is accessed with the Auto Tab function.

```
                    X16

(18)-F3     Kenner's TTP cycles  /48

(60)-F3          3 49
(10)-F2           OUR REG. 5.79  /14

      As seen on TV! Stunt cycles
      with wild riders including
      Debbie Lawler and Tee Tee
      Power!
```

Procedure:

1. Set the 18 point line centered on the measure.
2. Change to 60 point, set *3,* Auto Tab 1 (SS/AT1/SS), *49* (Superior) Quad Center, End line.
3. Reverse two points of line space (SS/RO/RO/SS).
4. Call Tab 1 (SS/TB1/SS).
5. Set *OUR REG. 5.79,* Quad Left, Return code.
6. Carriage Reset (SS/CR/SS) to restore the original measure.
7. Set the justified paragraph.
8. End the tape with a Stop code and process.

Typeset Copy:

Kenner's TTP cycles

3^{49}

OUR REG. 5.79

As seen on TV! Stunt cycles with wild riders including Debbie Lawler and Tee Tee Power!

Exercise:

The following business card represents a typical example for using Auto Tabs. Set the card in any of the eight type styles that would be applicable to a business card arrangement.

```
                                X18

(8)-F1/2  617-944-6555                          WILLIAM G. OTTO   /9
              Ext. 397                          Representative    /48

                    (18)-F3   Compugraphic Corp.   /14

                              Phototypesetters
                    Display Terminals    Processors

(8)-F1/3  Applications Department                   Wilmington     /9
                                                 Massachusetts 01887
```

Procedure:

1. Insert typesetting parameters as indicated in the markup. Access function codes as follows.
2. Auto Tab 1, set *617-944-6555*, Auto Tab 1; Insert Space, Auto Tab 2, set *WILLIAM G. OTTO*, Return code.
3. Call Tab 1, set *Ext. 397*, Quad Center; call Tab 2, set *Representative*, change to 18 point type, line space 48 points, Quad Center, Return code.
4. Carriage Reset; Auto Tab 3, set *Compugraphic Corp.*, Auto Tab 3; change to 10 point type, line space to 14 points, Quad Center, Return code.
5. Call Tab 3, set *Phototypesetters*; change line space to 12 points, Quad Center, Return code.
6. Set *Display Terminals*, Insert Space, set *Processors*; change line space to 36 points, Return code.
7. Carriage reset. Change to 8 point type, set *Applications Department*, Insert Space Auto Tab 4, set *Massachusetts 01887*, End Line.
8. Call Tab 4, reverse line space 9 points (SS/RL090/SS). Set *Wilmington,* Quad Center, Return code.
9. End the tape with Carriage Reset, a Stop code and process.

Typeset Copy:

617-944-6555
Ext. 397

WILLIAM G. OTTO
Representative

Compugraphic Corp.

Phototypesetters

Display Terminals **Processors**

Applications Department

Wilmington
Massachusetts 01887

Exercise:

It should be noted that Auto Tabs are generally established on the longest line in a tab column. The tab positions are defined by setting a trial line to establish the tab within the typeset line. Set the following copy as indicated in the markup. The trial line will be the longest line in each column.

```
                    X21

        (24)-F3   Men's Rugged Work  /24
                   Shoes and Boots   /20

(10)-F1   6" BOOT          8" BOOT          OXFORD  /30

(36)-F3        7^00            9^00             6^00 /10
(10)-F1  OUR REG. 9.69   OUR REG. 11.66   OUR REG. 8.96
```

Procedure:

1. Insert a line measure of 21 picas as indicated in the markup.
2. Change to 10 point type to establish the three tab columns for the price line (*OUR REG.*).
3. Set Auto Tab (SS/AT1/SS) *OUR REG. 9.69*, Auto Tab 1.
4. Insert Space. Set Auto Tab 2, *OUR REG. 11.66,* Auto Tab 2.
5. Insert Space. Set Auto Tab 3, *OUR REG. 8.96,* Return code, Carriage Reset. Insert several additional Return codes to avoid oversetting type on the trial line.
6. Change to 24 point, set the two 24 point display lines Quad Center on the measure.
7. Change to 10 point, Call Tab 1, set *6" BOOT,* Quad Center, Call Tab 2.
8. Set *8" BOOT,* Quad Center, Call Tab 3.
9. Set *OXFORD,* Quad Center, Return code.
10. Repeat the procedure for each tab line. Remember to change line space for the new line when setting the last tab column.
11. End the tape with Carriage Reset, a Stop code and process.

Typeset Copy:

Men's Rugged Work Shoes and Boots

6" BOOT	8" BOOT	OXFORD
7.00	9.00	6.00
OUR REG. 9.69	OUR REG. 11.66	OUR REG. 8.96

Exercise:

The versatile Automatic Tab function can be used for setting many forms of area composition. Set the following market ad, defining tab positions for the descriptive text, the number of items and the prices. To establish the tab positions, a trial line, based on the largest value in the tab area must be set.

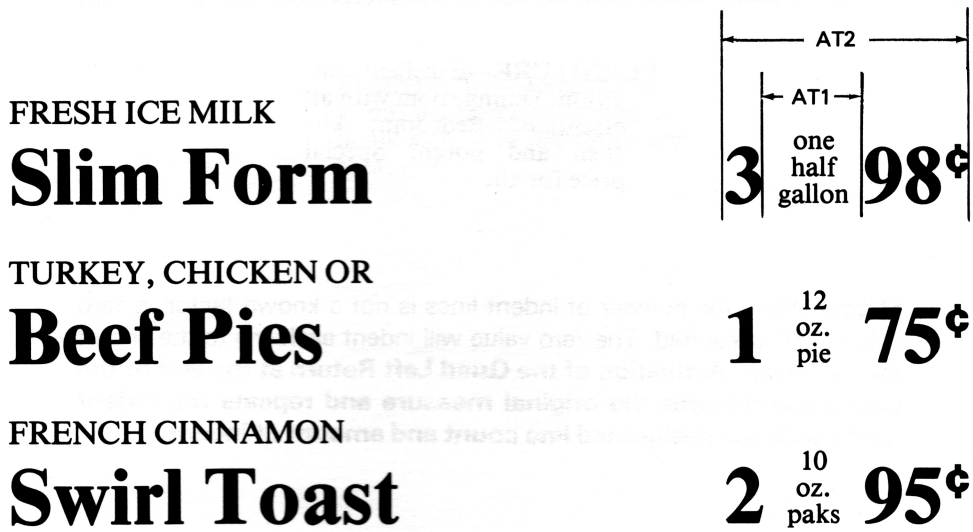
Note that the tabs are inserted in a reverse numerical sequence to establish the tab positions in the line. They will be called out in the correct sequence when setting the typeset copy.

```
                    X30

(12)-F1  FRESH ICE MILK    (10)    one   10/30
(30)-F3  Slim Form                 half
                             3     gallon   98¢

         TURKEY, CHICKEN OR        12
         Beef Pies                 oz.
                             1     pie      75¢

         FRENCH CINNAMON           10
         Swirl Toast               oz.
                             2     paks     95¢
```

Procedure:

1. Insert typesetting parameters for a set measure of 30 picas.
2. In 30 point, type *Slim Form,* Insert Space.
3. Change to 36 point, Set Auto Tab 2, *3.*
4. Change to 10 point. Set Auto Tab 1, En Space, *gallon*, En Space, Auto Tab 1.
5. Change to 36 point, set *98¢* Auto Tab 2, Return code. Activation of the Return code will establish the tab positions for the descriptive text and the number of items and the price. Carriage Reset.
6. Insert additional line space to allow for the setting of the trial line and set the ad as follows:
7. Set the 12 point line *Fresh Ice Milk,* Quad Left on the measure.
8. Change to 10 point and Call Tab 1.
9. Set *one,* Quad Center, Return code.
10. Set *half,* Quad Center, Return code.
11. Set *gallon*, Quad Center, End Line (zero line space).
12. Carriage Reset to restore the original measure.
13. Change to 30 point, type *Slim Form,* Quad Left, End Line.
14. Change to 36 point, call Tab 2.
15. Set *3 (Insert Space) 98¢*, Return code, Return code, Return code, Carriage Reset.
16. Repeat the procedure for each block.
17. End the tape with Carriage Reset,a Stop code and process.

Typeset Copy:



TTS CODE	FUNCTION
SS/NG/XXX,XXX/SS	Indent Paragraph

AUTOMATIC INDENT AND RUN-A-ROUND PROGRAM

The automatic indent program is applicable to various styles of paragraph indentions, allowing for cut run-a-rounds, hanging, second line or both margin indents. The tab functions, combined with indent commands designates the indent and counts the number of lines. **Tab positions 1 and 2 must be used when operating with the indent mode, and tab parameters must be inserted before the indent commands.** Command codes can be inserted in any order **except** for the Indent Paragraph/Indent Cut commands. They must be the last codes in the sequence, since they start the indent program. The indent program is always used in the Automatic Line Ending mode. The Carriage Reset command restores the standard operating mode.

Indent Paragraph (SS/NG/SS)

When inserted, the Indent Paragraph command repeats the indent for every new paragraph. The Indent Paragraph command (SS/NG/XXX, XXX/SS) must be followed by the number of full measure lines and the number of lines to be indented.* Three digits must be entered for each designation (001,000) to a maximum number of 999 lines for each. **The two values must be separated by a comma.** Tab positions are designated before the indent mode and locked in with End of Line or a Return code.

Example:

Hanging Indent

SS/TB1/SM1100/TB2/SM1000/ST0100/SS/Return/SS/NG001,000/SS

FURNITURE—Excellent condition. Dining room with all essentials. Bedroom, kitchen and porch. Special price for all.

***Note:** When the number of indent lines is not a known factor, a zero value (000) is inserted. The zero value will indent each line to the end of the paragraph. **Activation of the Quad Left Return at the end of the paragraph restores the original measure and repeats the indent mode with the designated line count and amount of indent.**

Example:

Hanging Indent with Insert Rules

SS/TB1/SM1100/TB2/SM1000/ST0100/SS/Return/SS/NG002,000/SS

PART TIME: Man to work in well established retail store in Spencerport area, mornings only. General office work, and some sales. Excellent working conditions. Experience not necessary. Apply in writing to Box 310, in care of this newspaper.

RINGS: Send $3.00 for a beautiful adjustable cocktail ring with hand set stones. Miss Liza, Box 817, Portage, Indiana. 86344.

The mode is designated as two (2) full lines allowing for the cut-off rule. The automatic rule is inserted followed by the Return code and is counted as the first line in the sequence. The last line in the paragraph is **Quadded Left with End of Line** (No Lead) and three points of additional line space.

Example:

Second Line Indent

SS/TB1/SM1100/TB2/SM1000/ST0100/SS/Return/SS/NG/001,001/SS

FURNITURE—Excellent condition. Specially priced for quick sale. Will deliver to any area.

Example:

Indent Both Margins
Three lines to the full measure with ten indented lines

SS/TB1/SM1800/TB2/SM1200/ST0300/SS/Return/SS/NG/003,010/SS

The automatic indent program is applicable to various styles of paragraph indentions, allowing for cut run-a-rounds, hanging second line or both margin indents. The tab functions, combined with indent commands designates the indent and counts the number of lines. Tab positions 1 and 2 must be used when operating with the indent mode, and tab parameters must be inserted before the indent commands. Command codes can be inserted in any order except for the Indent Paragraph/Indent Cut commands. They must be the last codes in the sequence, since they start the indent program. The indent program is always used in the Automatic Line Ending mode. The Carriage Reset command restores the standard operating mode.

TTS CODE	FUNCTION
SS/NC/XXX,XXX/SS	Indent Cut

Indent Cut (SS/NC/SS)

The Indent Cut command (SS/NC/XXX,XXX/SS)** is basically the same as the Indent Paragraph, the exception being that the indent **will not** be repeated for the next paragraph. The last sequence (full measure) will be restored and remain in affect. The Indent Cut can be recalled with the **Indent On command.**

Example:

18 pica measure, 5 full lines followed by 10 indented lines for a 6 pica cut

SS/TB1/SM1800/TB2/SM1200/ST0600/SS/Return/SS/NC005,010/SS

The automatic indent program is applicable to various styles of paragraph indentions, allowing for cut run-a-rounds, hanging, second line or both margin indents. The tab function, combined with indent commands designates the indent and counts the number of lines. Tab positions 1 and 2 must be used when operating with the indent mode, and tab parameters must be inserted before the indent commands. Command codes can be inserted in any order except for the Indent Paragraph/Indent Cut commands. They must be the last codes in the sequence, since they start the indent program. The indent program is always used in the Automatic Line Ending mode. The carriage Reset command restores the normal operating mode. The Indent Paragraph command repeats the indent for every new paragraph.

****Note:** The Indent Cut mode must be used when indents have additional quad left lines within the indented text.

TTS CODES	FUNCTIONS
SS/NO/SS	Indent On
SS/NL/SS	Ragged Right
SS/NR/SS	Ragged Left

Indent On (SS/NO/SS)

The Indent On command (SS/NO/SS) restores the indent program after having been recalled to the standard operating mode with the Carriage Reset command.

Ragged Right (SS/NL/SS)

Ragged Right composition can be set by insertion of the Ragged Right command (SS/NL/SS). All copy will be set flush left with six (6) units of interword spacing. Hyphenation will be automatically inserted unless the hyphenation mode is turned off. The standard operating mode can be restored by the Carriage Reset command.

Example:

Ragged Right

Ragged Right composition can be set by insertion of the Ragged Right command. All copy will be set flush left with six (6) units of interword spacing. Hyphenation will be automatically inserted unless the hyphenation mode is turned off. The standard operating mode can be restored by the Carriage Reset command.

Ragged Left (SS/NR/SS)

Ragged Left composition can be set by insertion of the Ragged Left command (SS/NR/SS). All copy will be set flush right with six (6) units of interword spacing. Hyphenation will be automatically inserted unless the hyphenation mode is turned off. The standard operating mode can be restored by the carriage Reset command.

Example:

Ragged Left

Ragged Left composition can be set by insertion of the Ragged Left command. All copy will be set flush right with six (6) units of interword spacing. Hyphenation will be automatically inserted unless the hyphenation mode is turned off. The standard operating mode can be restored by the Carriage Reset command.

Note: The Ragged Right/Ragged Left commands can be combined with indents.

TTS CODES	FUNCTION
SS/DFXX/	Define Format
SS/XX	Call Format

FORMATS

What is a Format?

A format is simply a combination of typesetting commands (functional and/or alpha characters) that are stored into a memory. The stored format commands can be recalled at any time, automatically accessing all function and character codes as stored in the format mode. Line measures, point sizes, type styles, leading, tab positions, and line ending codes are some of the functions that can be formatted individually or in combination with each other.

Why Formats?

Formats are normally composed of typesetting elements that are repetitious. By storing these elements, they can be recalled as often as needed, eliminating redundant keystrokes and possible errors.

Example:

The following layout illustrates a copy block that is repetitive in arrangement, type styles, and point size. It is composed of four basic typesetting elements. Shown below are the four elements and the codes as accessed from the keyboard.

Element 1: Line 1; Set Measure 21 Picas, Face 2, Point Size 24, Line Space 14 points.
(SS/SM2100/F2/P24/SL140/SS) (18 codes)

Element 2: Line 2; Face 3, Point Size 12, Line Space 10 points
(SS/F3/P10/SL100/SS) (12 codes)

Element 3: Line 3; Face 1, Point Size 10, Line Space 6 points
(SS/F1/P10/SL060/SS) (12 codes)

Element 4: Line 4; Point Size 12, Insert Rule, Line Space 24 points, Return code
(SS/P12/IR/SL240/SS/Return code) (13 codes)

Total — 55 Format Element Codes

Each format line is recalled with the Call Format command. (SS/01 call format one — three keystrokes). Defining the codes of each element into a format, reduces keystrokes for each copy block by 43 codes or keystrokes. This means a saving of 253 codes for the complete copy block.

'75 CADILLAC ← Element 1
COUPE DeVILLE ← Element 2
Full Power Low Mileage ← Element 3

1975 CHEVROLET ← Element 4
IMPALA SPORT COUPE
Full Power Air Conditioning

1974 BUICK
ELECTRA 4-DR. HT.
Full Power. Clean Automobile.

1973 CHEVROLET
VEGA WAGON
Auto. Transmission. Priced to Sell.

1971 FORD
LTD 10 PASS. WAGON
Clean Car.

1974 CADILLAC
ELDORADO COUPE
Many Extras.

Format Controller

The phototypesetter has sixteen format positions for storing typographic information. Each format can store up to 32 data codes consisting of functions and/or alphanumeric codes. **Formats can be prestored on tape, ready for reuse at any time.**

Defining Formats

Formats are defined by a *Super Shift command followed by a "DF" (define format) and the format number. Format numbers are from 01 to 16, and two digits must be entered at all times. **Up to 32 data codes can be entered, being terminated by a Cancel Word code.** The Cancel Word code (Elevate code, bit 2) designates the end of the format automatically reverting to the normal mode of operation. (i.e. The Define Format would cause all subsequent codes up to the Cancel Word to be sequentially loaded into the format space).

Example: Define Format

SS/DF01/SS/SM2400/P18/F2/SL240/SS/Cancel Word

Format one, set measure 24 picas, point size 18, face 2,
set leading 24 points, end of format

Call Format

All data stored in a format can be recalled at any time. The *Super Shift command followed by the format number (01 to 16) will inject all data stored in the format into the system.

Example: Call Format

SS/01

(Call Format One)

Delete Formats

The Delete Formats command clears all format space of data. It is recommended to delete all formats before entering any new data information. It is not always necessary to delete all formats for insertion of data, since defining a format with new data will automatically overwrite anything previously stored (i.e., new data can be inserted into occupied format space).

Example: Delete Formats

***SS/DE**

(Delete All Formats)

*The Format commands are not terminated with a closing Super Shift.

Direct Over-run Formats

Format information exceeding 32 data codes can be stored by continuing to input data beyond the normal 32 codes, terminating the format with the Cancel Word code. All format data beyond the 32 codes will be stored in the next sequential format position and this format could no longer be used as a format number i.e., a direct over-run of format one would include format position two and format two could no longer be used as an individual format position. The next format to be defined must be another number, rather than format two. The over-run format would be recalled as format one. If format two was redefined with new information, it would over-ride the last data entered as over-run in format one.

Example: Over-run Format One

1 ← Format Position One → 32	Format Position Two
SS/DF01/SS/SM3000/P12/F2/SL140/SS The quick brown fox jumped over/**QL/R**	
	51 data codes

Chaining Formats

In the event the data in a format exceeds 32 codes and an adjoining format position is not available for direct over-run of format data, two separate formats can be "chained from one to another (e.g., data from format three could be chained as one continuous string with format 12). If the data contained 47 codes, 27 codes would be entered in format three. Chaining to format 12 would be accomplished by typing the Super Shift code, the second format number (12) and another Super Shift code, terminating with the Cancel Word code as the 32nd code. Format 12 would then be defined (SS/DF12/SS) and input of data would be continued, terminating with the Cancel Word code. The chained formats are recalled by calling Format 3. This would inject the first 27 data codes into the system automatically followed by format 12 eliminating the chaining command codes of SS/DF12/SS. The chaining data must be done in the four data positions (28, 29, 30, 31) directly preceding the first format's terminating Cancel Word code.

Example: Chaining Formats, Positions 3 and 12

Format Three **Data Position** 27 28 29 30 31 32

SS/DF03/SS/SM3000/P12/F2/SL160/SS SS/AT1/SS Comp/**SS/12/SS/Cancel Word**

1 ←——————————————————→ 32

Format Twelve

SS/DF12/ugraphic/**SS/AT1/QC/SS/Return Code/Cancel Word**

Writing Formats

Formats are best utilized when the typesetting parameters are repetitive. The copy is broken into elements (point size, style, line space, etc.) and recalled as needed.

Exercise A:

Format the illustrated auto ad as shown in the copy markup. Typesetting elements are repeated in each copy block with the exception of the changes in output copy.

```
                                X21

(24)-F4                                '75 CADILLAC  /14
(12)-F3                            COUPE De VILLE    /10
(10)-F1                  Full Power Low Mileage      /6
(12)      ____________________________________________ /24

                                 1975 CHEVROLET
                             IMPALA SPORT COUPE
                   Full Power Air Conditioning
          ____________________________________________

                                 1974 BUICK
                            ELECTRA 4-DR. HT.
                 Full Power. Clean Automobile.
          ____________________________________________

                                 1973 CHEVROLET
                                     VEGA WAGON
          Auto. Transmission. Priced to Sell
          ____________________________________________

                                 1971 FORD
                            LTD 10 PASS. WAGON
                                 Clean Car.
```

Procedure A:

1. Define format element one (1) as follows
   SS/DF01*/SS/SM2100/P24/F4/SL140/SS/Cancel Word**
2. Define format element two (2).
   SS/DF02/SS/P12/F3/SL100/SS/Cancel Word
3. Define format element three (3).
   SS/DF03/SS/P10/F1/SL060/SS/Cancel Word
4. Define format element four (4).
   SS/DF04/SS/P12/IR/SL240/SS/Return code/Cancel Word
5. Call format one (SS/01). Set *1975 CADILLIC*, Quad Right, Return code.
6. Call format two (SS/02). Set *Coupe DeVille*, Quad Right, Return code.
7. Call format three (SS/03). Set *Full Power, Low Mileage*, Quad Right, Return code.
8. Call format four (SS/04). (Format four has an Insert Rule command with a Return code, automatically inserting the rule and ending the line.)
9. Call format one again and repeat the procedure for each block.
10. End the tape with a Stop code and process.

*The Format command is not terminated with a closing Super Shift code.

**The Cancel Word code ends the format.

Typeset Copy:

'75 CADILLAC
COUPE DeVILLE
Full Power Low Mileage

1975 CHEVROLET
IMPALA SPORT COUPE
Full Power Air Conditioning

1974 BUICK
ELECTRA 4-DR. HT.
Full Power. Clean Automobile

1973 CHEVROLET
VEGA WAGON
Auto. Transmission. Priced to Sell.

1971 FORD
LTD 10 PASS. WAGON
Clean Car.

Exercise B:

Typesetting with formats eliminates errors and additional keystrokes, thereby furthering typographic production. Reset the previous exercise. Included in the typesetting elements are the line endings (Quad Right/Return code).

```
                                X21

(24)-F4                      '75 CADILLAC  /14
(12)-F3                   COUPE De VILLE  /10
(10)-F1             Full Power Low Mileage  /6
(12)  ____________________________________  /24

                          1975 CHEVROLET
                       IMPALA SPORT COUPE
                 Full Power Air Conditioning

____________________________________________

                          1974 BUICK
                       ELECTRA 4-DR. HT.
            Full Power. Clean Automobile.

____________________________________________

                          1973 CHEVROLET
                              VEGA WAGON
        Auto. Transmission. Priced to Sell

____________________________________________

                          1971 FORD
                     LTD 10 PASS. WAGON
                          Clean Car.
```

Procedure B:

1. Define format element one (01).
   SS/DF01/SS/SM2100/P24/F4/SL140/SS/Cancel Word
2. Define format element two (02).
   SS/DF02/SS/QR/SS/Return code/SS/P12/F3/SL100/SS/Cancel Word
3. Define format element three (03).
   SS/DF03/SS/QR/SS/Return code/SS/P10/F1/SL060/SS/Cancel Word
4. Define format element four (04).
   SS/DF04/SS/QR/SS/Return code/SS/P12/IR/SL240/SS/Return code/Cancel Word
5. Call format one (SS/01). Set *1975 CADILLAC.*
6. Call format two (SS/02). Set *Coupe DeVille.*
7. Call format three (SS/03). Set *Full Power, Low Mileage.*
8. Call format four (04).
9. Call format one again, repeating the procedure for each block.
10. End the tape with a Stop code and process.

Typeset Copy:

'74 CADILLAC
COUPE DeVILLE
Full Power Low Mileage

1975 CHEVROLET
IMPALA SPORT COUPE
Full Power Air Conditioning

1974 BUICK
ELECTRA 4-DR. HT.
Full Power. Clean Automobile.

1973 CHEVROLET
VEGA WAGON
Auto. Transmission. Priced to Sell

1971 FORD
LTD 10 PASS. WAGON
Clean Car.

Exercise C:

Set the following ad as illustrated in the copy markup. The format is composed of three elements. All line endings must be made by the operator.

```
                                   X12
                 (18)-F2   1970 FORD   /20
Element 1 -                Custom 500
                                Sedan
                 (10)-F1   Deluxe in every de- /12
Element 2 -                tail. V-8 engine, all
                           automatic, radio, heat-
                           er and power steering  /24
Element 3 -      (24)-F4          $1500 /48

                           1969 CHEVY

                           Bel Aire

                             Coupe

                           6 cylinder, standard,
                           radior, heater, white
                           walls. Ready to go.

                             $1250
```

Procedure C:

1. Define format one (01) as follows.
   SS/DF01/SS/SM1200/F2/P18/SL200/SS/Cancel Word
2. Define format two (02).
   SS/DF02/SS/P10/F1/SL120/SS/Cancel Word
3. Define format three (03).
   SS/DF03/SS/P24/F4/SS/Cancel Word
4. Call format one (SS/01). Set *1970 Ford,* Quad Center, Return code; set *Custom 500,* Quad Center, Return code; set *Sedan,* Quad Center, Return code.
5. Call format two (SS/02). Set the paragraph, Quad Left, Return code, Return code. The extra Return code provides the additional 12 points of line space for the 24 point price.
6. Call format three (SS/03). Set *$1500,* Quad Center, Return code, Return code, Return code, Return code (48 points line space between copy blocks).
7. Repeat the procedure for the next copy block.
8. End the tape with a Stop code and process.

Typeset Copy:

1970 FORD
Custom 500
Sedan

Deluxe in every detail. V-8 engine all automatic, radio, heater and power steering.

$1500

1969 CHEVY
Bel Aire
Coupe

6 cylinder, standard, radio, heater, white walls. Ready to go.

$1250

Exercise D:

Tab sequences for area composition can also be inserted into format elements. Set the following copy as shown in the markup. The format will consist of six (6) typesetting elements. The second copy block contains a tab to position descriptive text next to a display price.

```
(12)-F1    FRESH, TENDER   /24
(24)-F3        GREEN
               BEANS       /48
(48)-F4         19¢
(12)-F1           LB.

          COLONIAL MASTER
              SMOKED
             SHOULDER

(10)-F3   Extra Lean   /12
        Short Shank
          Shoulder        56¢
                            LB.
```

Procedure D:

1. Define format one (01) as follows:
   SS/DF01/SS/CR/SM1200/P12/F1/SL240/SS/Cancel Word
2. Define format two (02).
   SS/DF02/SS/F3/P24/SS/Cancel Word
3. Define format three (03).
   SS/DF03/SS/P48/F4/SS/Return code/Cancel Word
4. Define format four (04).
   SS/DF04/SS/OF*/SS/¢/SS/P12/F1/SS/LB./Cancel Word
5. Define format five (05).
   SS/DF05/SS/SM0600/P10/SL120/SS/Cancel Word
6. Define format six (06).
   SS/DF06/SS/TB1/ST0600/SM0600/F3/P48/TB1/SS/Cancel Word
7. Call format one (SS/01). Set *FRESH, TENDER*, Quad Center, Return code.
8. Call format two (SS/02). Set *GREEN*, Quad Center, Return code. Set *BEANS* Quad Center, Return code.
9. Call format three (SS/03). Set *19.*
10. Call format four (SS/04), Quad Center, Return code, Return code.
11. Call format one (SS/01). Set *COLONIAL MASTER*, Quad Center, Return code.
12. Call format two (SS/02). Set *SMOKED,* Quad Center, Return code. Set *SHOULDER*, Quad Center, Return code.
13. Call format five (SS/05). Set *Extra Lean, Quad Center, Return code; set Short Shank*, Quad Center, Return code. Set *Shoulder,* Quad Center, end line (no line space).
14. Call format six (SS/06). Set *56.*
15. Call format four (SS/04), Quad Center, Return code.
16. End the tape with Carriage Reset, a Stop code and process.

Typeset Copy:

FRESH, TENDER

GREEN BEANS

19¢ LB.

COLONIAL MASTER

SMOKED SHOULDER

Extra Lean Short Shank Shoulder **56¢** LB.

*Only Flash to position LB. under superior 48 point ¢ sign.

Exercise E:

Format elements can be comprised of function and/or alphanumeric characters. Set the following copy as marked. Format element two having more than 32 codes must over-run into format position three.

```
                                X30
                                          X5
(24)-F2   Sliced Bologna  (10)  Three pounds     68¢  /30
                          F1
          Pullman Ham           Three pounds   $1.50

          Minced Ham            Three pounds     98¢
```

Procedure E:

1. Define format one (01) as follows:
   SS/DF01/SS/CR/SM3000/P24/F2/SL300/SS/Cancel Word
2. Define format two (02).
   SS/DF02/SS/EL/P10/F1/TB1/ST2000/SM0500/TB1/SS/
   Three pounds/SS/QC/SS/Return code/Cancel Word
3. Call format one (SS/01). Set *Sliced Bologna,* Insert Space *68¢*.
4. Call format two (SS/02).
5. Repeat the procedure for each line.
6. End the tape with Carriage Reset, a Stop code and process.

Typeset Copy:

Sliced Bologna	Three pounds	**68¢**
Pullman Ham	Three pounds	**$1.50**
Minced Ham	Three pounds	**98¢**

Exercise:

Formatting of typesetting elements in a market ad simplifies the work of the operator. Set the following copy as marked. The centering position for the descriptive text is established with Auto Tabs.

```
                                    X24

            (10)-F1  DEL MONTE  /10
                                                   14-oz. /10
(24)  (8)   (30)-F2  Ketchup (12) ................ 2  F-1 Blts.    59¢  /18

                     PRIME
                                                    in
                     Tea Bags .............. 100      Pkg.        98¢

                     GIANT
                                                   Lbs.
                     Green Bean ............... 3    For         65¢
```

Procedure:

1. Establish typesetting parameters and tab positions for the descriptive text, number of items and price as described in Auto Tabs (Pages 128-129).
2. Define format one (01).
   SS/DF01/SM2400/F1/SL100/SS/Cancel Word
3. Define format two (02).
   SS/DF02/Quad Left/Return code/SS/P08/TB1/SS/Cancel Word
4. Define format three (03).
   SS/DF03/QC/EL/CR/P24/F3/SS/Cancel Word
5. Define format four (04).
   SS/DF04/P12/IL/P30/TB2/SS/Cancel Word
6. Define format five (05).
   SS/DF05/SL180/SS/Return code/SS/CR/SS/Cancel Word
7. Call format one (SS/01). Set *Del Monte.*
8. Call format two (SS/02). Set *14 oz.,* Quad Center, Return code. Set *Btls.*
9. Call format three (SS/03). Set *Ketchup.*
10. Call format four (SS/04). Set *2, (Insert Space) 59¢.*
11. Call format five (SS/05).
12. Call format one, and repeat the procedure for the complete copy block.
13. End the tape with a Stop code and process.

Typeset Copy:

DEL MONTE
Ketchup ..... **2** 14-oz. Btls. **59¢**

PRIME
Tea Bags ..... **100** in Pkg. **98¢**

GIANT
Green Bean ..... **3** Lbs. For **65¢**

TTS CODES	FUNCTION
SS/X/SS	Wire Service Text
SS/B/SS	Wire Service Stock

WIRE SERVICE

Standard Wire Service

Wire Service tape is set to a standard typesetting configuration of eight (8) point type on an eleven (11) pica measure. Based on operating procedure for hot metal line casting machines, the Wire Service program is not completely compatible with the phototypesetter. For purposes of compatability, a special Wire Service mode is provided on the Control Panel. When combined with Wire Service command codes, the Wire Service mode ignores or re-interprets function codes related to the line casting system.

Wire Service Text Operation

For the phototypesetter to run Wire Service tape, the tape input switch on the Control Panel should be placed in the Wire Service mode. **The Wire Service type styles must be in font positions (tracks) one and two on the film strip.** Typesetting instructions for the measure, point size, type style and line space are pre-programmed on the tape before operation (SS/SM1100/P08/F1/SL080/SS). An operating command for Wire Service text is then inserted (SS/X/SS). This instructs the phototypesetter to ignore fixed space codes used for justification on the line caster.

Wire Service Stock

Wire Service stock market tapes are set in six (6) point, with an eleven (11) pica measure. Set tabular, the stock market text includes fixed space for the alignment of type. The Super Shift command (SS/B/SS) instructs the phototypesetter to recognize the fixed space codes previously ignored in Wire Service Text operation.

TTS CODES	FUNCTION
SS/W	Wire Service Stripping
SS/UW	Wire Service Stripping (Upper/Lower Rail)

Wire Service Rejustification

Although Wire Service tape is set to standard typesetting configurations, there are times when these standards are rearranged. The Wire Service text could be set in a larger point size or the line measure could be changed. In order to justify the Wire Service lines after modification, new parameters for measure, point size, type styles and line space must be inserted. The phototypesetter is then reprogrammed with the Super Shift command (SS/W*). The new program provides for rejustification of lines. Previous line endings are ignored, word space inserted for continuity of text and hyphens inserted or deleted with the exception of compounded words.

In the Wire Service rejustification mode, the Upper Rail code is ignored, with the text set in the Lower Rail light face Roman type. When bold lines are required the Super Shift command (SS/UW*) reprograms the system to recognize the Upper Rail code and set the bold lines.

*The Super Shift "W" command is a special command for Wire Service stripping. A second Super Shift code is **not** inserted after the alpha "W" since the program will no longer recognize the Super Shift (Add Thin) command code.

IMPORTANT: When operating Wire Service rejustification, the standard mode of operation is not functional. The Super Shift code is no longer recognized as a command code. All commands for measure, style, point size, line space, etc., must be inserted before accessing the Wire Service Stripping mode. The mode also nullifies the flashing of characters in both directions, limiting processing speed to 60 lines per minute in paired type styles or 50 lines per minute in eight-track operation.

The standard mode of operation can be restored by activation of the Reset function on the Control Panel or by placing the Tape Control switch to 6-level operation.

WIRE SERVICE SUPER SHIFT CODES

Stripping Program	Standard Program
SS/W (No closing Super Shift) Lower Rail (Roman)	SS/X/SS ..... Wire Service Text
SS/UW (No closing Super Shift). Upper/Lower Rail	SS/B/SS ..... Wire Service Stock (Tabular)

SUPER SHIFT FUNCTIONS

Machine Set Up

Line Measure Set	SS/SMXXXX/SS*	03/13/345/03
Line Space Set	SS/SLXXX/SS*	03/13/25/03
Auto Line Ending	SS/AE/SS (Automatic)	03/12/1/03
Manual Line Ending	SS/ME/SS	03/345/1/03
Auto Char Com	SS/AC/SS (Automatic)	03/12/234/03
Variable Char Comp	SS/VC/SS	03/2345/234/03
Char Com Set	SS/SCXXX/SS*	03/13/234/03
Letterspace On	SS/LJ/SS (Automatic)	03/25/124/03
Letterspace Off	SS/JX/SS	03/124/1345/03
Hyphenation On	SS/HO/SS (Automatic)	03/35/45/03
Hyphenation Off	SS/HX/SS	03/35/1345/03
4 Track	SS/T4/SS	03/5/024/03
8 Track	SS/T8/SS	03/5/023/03
Carriage Reset	SS/CR/SS (Restores original measure in tab mode; Restores standard operating mode when using automatic indents)	03/234/24/03

Additional Leading (Line Space)

Line Space	SS/LS/SS (Equals Primary Leading)	03/25/13/03
One Point Leading	SS/OP/SS	03/45/235/03
Half Point Leading	SS/HP/SS	03/35/235/03
Forward Leading	SS/FLXXX/SS (XXX equals leading amount in points and half points, limit 99 points)	03/134/25/03
Reverse Line Space	SS/RS/SS (Reverse Primary Leading)	03/24/13/03
Reverse One Point	SS/RO/SS	03/24/45/03
Reverse Half Point	SS/RH/SS	03/24/35/03
Reverse Leading	SS/RLXXX/SS (XXX equals leading amounts in points and half points, limit 72 points)	03/24/25/03
End Line	SS/EL/SS (Nc Lead)	03/1/25/03

Functions

Quad Right	SS/QR/SS	03/1235/24/03
Quad Center	SS/QC/SS	03/1235/234/03
Forward One Unit	SS/AU/SS	03/12/123/03
Back One Unit	SS/SU/SS	03/13/123/03
Forward One Point	SS/AP/SS	03/12/235/03
Back One Point	SS/SP/SS	03/13/235/03
No Flash (Space Only)	SS/SO/SS	03/13/45/03
Space Off	SS/SX/SS	03/13/1345/03
Flash Only	SS/OF/SS	03/45/134/03
Insert Leader	SS/IL/SS	03/23/25/03
Insert Rule	SS/IR/SS	03/23/24/03
Tab Set	SS/STXXXX/SS*	03/13/5/03
Auto Tab	SS/ATX/SS*	03/12/5/03
Tab (Call)	SS/TBX/SS*	03/5/145/03

*The X's indicate that numeric values must be entered from the keyboard in order to complete the command sequence.

Justification

Indent Paragraph	SS/NGXXX/SS*	03/34/245/03
Indent Cut	SS/NCXXX/SS*	03/34/234/03
Indent On	SS/NO/SS	03/34/45/03
Ragged Right	SS/NL/SS**	03/34/25/03
Ragged Left	SS/NR/SS**	03/34/24/03
Define Space Band (Minimum)	SS/MN/XX/SS* (XX to be minimum value of 04, 05, 06 or 08 relative units)	03/345/34/03
Define Space Band (Maximum)	SS/MX/XX/SS* (XX to be maximum value of space band, up to 60 relative units)	03/345/1345/03

Wire Service

Wire Service Text	SS/X/SS	03/1345/03
Wire Service Tab	SS/B/SS	03/145/03

Require No Closing Super Shift

Wire Service Stripping	SS/W (Lower Rail)	03/125
Wire Service Stripping	SS/UW (Upper and Lower Rail)	03/123/125
Define Format	SS/DF (Terminated with Cancel Word)	03/14/134
Delete Formats	SS/DE	03/14/1
Call Format	SS/XX*	

*The X's indicate that numeric values must be entered from the keyboard in order to complete the command sequence.

**Carriage Reset restores the normal mode of operation.

FLASHABLE CHARACTER CODES

Keys	TTS Characters	TTS Codes
Shift	Shift	1245
Unshift	Unshift	12345
Thin Space	Thin Space	0
En Space	En Space	0234
Em Space	Em Space	013
Stop (Bell)	Stop	0124
Comma	Comma	034
Asterisk	Comma (UC)*	1245/034
Period	Period	0345
Sup Period	Period (UC)*	1245/0345
Close Quote	Close Quote	04
Open Quote	Open Quote (UC)*	1245/04
$	$	012
!	$ (UC)*	1245/012
)	)	015
(	((UC)*	1245/015
Percent	En Leader	01235
Sup $	En Leader (UC)*	1245/01235
?	Em Leader	035
&	Em Leader (UC)*	1245/035
Hyphen	Hyphen	014
Em Dash	Hyphen (UC)*	1245/014
A	A	12
B	B	145
C	C	234
D	D	14
E	E	1
F	F	134
G	G	245
H	H	35
I	I	23
J	J	124
K	K	1234
L	L	25
M	M	345
N	N	34
O	O	45
P	P	235
Q	Q	1235
R	R	24
S	S	13
T	T	5
U	U	123
V	V	2345
W	W	125
X	X	1345
Y	Y	135
Z	Z	15

*UC — Upper Case

1	1	01345
2	2	0125
3	3	01
4	4	024
5	5	05
6	6	0135
7	7	0123
8	8	023
9	9	045
0	0	0235
;	;	0245
:	: (UC)*	1245/0245
Cancel Word	Unshift Elevate	12345/2
Cancel Line	Shift Elevate	1245/2
Discretionary Hyphen	Tape Feed	
Insert Space	Quad Center	02345
Return	Return	4
Quad Left	Quad Left	0134

Em Precedence Codes

BLR (Baseline Rule)	Em Elevate	025/2
Star	Shift Em Elevate	1245/025/2
Asterisk	Em Return	025/4
Check	Shift Em Return	1245/025/4
En Bullet	Em Rubout	025/012345
Register Mark	Shift Em Rubout	1245/025/012345
Slash	Em Em	025/025
Superior Cent	Shift Em Em	1245/025/025
¾	Em Bell	025/0124
¼	Shift Em Bell	1245/025/0124
½	Em Super Shift	025/03
⅓	Shift Em Super Shift	1245/025/03
)	Em QL	025/0134
(	Shift Em QL	1245/025/0134
Inf 1	Em One	025/01345
⅔	Shift Em One	1245/025/01345
Inf 2	Em Two	025/0125
/ (Fraction Bar)	Shift Em Two	1245/025/0125
Inf 3	Em Three	025/01
En Dash (-)	Shift Em Three	1245/025/01
Inf 4	Em Four	025/024
En Ldr	Shift Em Four	1245/025/024
Inf 5	Em Five	025/05
¢	Shift Em Five	1245/025/05
Inf 6	Em Six	025/0135
□	Shift Em Six	1245/025/0135
Inf 7	Em Seven	025/0123
Inf 8	Em Eight	025/023
Inf 9	Em Nine	025/045
Inf 0	Em Zero	025/0235

POINT SIZE

5 Point	SS P 05 SS	03/235/0235/05/03
6 Point	SS P 06 SS	03/235/0235/0135/03
7 point	SS P 07 SS	03/235/0235/0123/03
8 point	SS P 08 SS	03/235/0235/023/03
9 Point	SS P 09 SS	03/235/0235/045/03
10 Point	SS P 10 SS	03/235/01345/0235/03
11 Point	SS P 11 SS	03/235/01345/01345/03
12 Point	SS P 12 SS	03/235/01345/0125/03
14 Point	SS P 14 SS	03/235/01345/024/03
18 Point	SS P 18 SS	03/235/01345/023/03
24 Point	SS P 24 SS	03/235/0125/024/03
30 Point	SS P 30 SS	03/235/01/0235/03
36 Point	SS P 36 SS	03/235/01/0135/03
42 Point	SS P 42 SS	03/235/024/0125/03
48 Point	SS P 48 SS	03/235/024/023/03
54 Point	SS P54 SS	03/235/05/024/03
60 Point	SS P 60 SS	03/235/0135/0235/03
72 Point	SS P 72 SS	03/235/0123/0125/03

TYPE STYLES

1	SS F 1 SS	03/134/01345/03
2	SS F 2 SS	03/134/0125/03
3	SS F 3 SS	03/134/01/03
4	SS F 4 SS	03/134/024/03
5	SS F 5 SS	03/134/05/03
6	SS F 6 SS	03/134/0135/03
7	SS F 7 SS	03/134/0123/03
8	SS F 8 SS	03/134/023/03

UniSetter
DISPLAY ARRANGEMENT No. 1000

*Em Precedent/Upper Case
*Em Precedent Lower Case

(P) 01345	(P) 0125	(P) 01	(P) 024	(P) 05	(P) 0135	(P) 0123	(P) 023	(P) 045	(P) 0235
2/3 INF 1	/ F.B. INF 2	EN – INF 3	En . INF 4	¢ INF 5	INF 6	INF 7	INF 8	INF 9	INF 0

0134	(P) 0134	012	01345	0125	01	024	05	0135	0123	023	045	0235	0245	015	(P) 012345	2
QL	[ ]	! $	SUP 1 1	SUP 2 2	SUP 3 3	SUP 4 4	SUP 5 5	SUP 6 6	SUP 7 7	SUP 8 8	SUP 9 9	SUP 0 0	: ;	( )	® •	CNCL WORD

	0	0234	1235	125	1	24	5	135	123	23	45	235	014	01235	02345		
QC	THIN	EN	Q	W	E	R	T	Y	U	I	O	P	— -	$ %	Insert Space	Insert Ldrs.	

	013		12	13	14	134	245	35	124	1234	25	(P) 025	4	035	(P) 0124		
QR	EM	SHIFT LOCK	A	S	D	F	G	H	J	K	L	¢ /	RET	& ?	¼ ¾	TAB	

(P) 03	03	04	1245	15	1345	234	2345	145	34	345	034	0345	(P) 2	1245		(P) 4	
⅓ ½	Super Shift	' ,	SHIFT	Z	X	C	V	B	N	M	' ,	: .	★ BLR	SHIFT	DH	✓ *	

3

SPACE BAR

Space Band

ABBREVIATIONS:

INF - Inferior
SUP - Superior
F. B. - Fraction Bar
CNCL WORD - Cancel Word
En (–) - En Dash
En (.) - En Leader
Insert Ldrs. - Insert Leaders
DH - Discretionary Hyphen

BLR - Base Line Rule
RET - Return
QL - Quad Left
QC - Quad Center
QR - Quad Right

***Em precedent characters are accessed with the 025 Em space and the numeric characters 1 to 0.**

UniSetter

TEXT ARRANGEMENT No. 1001

*Em Precedent/Upper Case
*Em Precedent Lower Case

	(P) 01345	(P) 0125	(P) 01	(P) 024	(P) 05	(P) 0135	(P) 0123	(P) 023	(P) 045	(P) 0235									
	★ ☆	✓ {	° }	FB / VR |	En Ldr @	□ ■	±	Minus —	′	″									
0134	(P) 0134	012	01345	0125	01	024	05	0135	0123	023	045	0235	0245	015	(P) 012345	2			
QL	◄ ►	! $	¶ 1	§ 2	# 3	† 4	‡ 5	÷ 6	= 7	+ 8	× 9	? 0	: ;	( )	En - EN ●	CNCL WORD			
	0	0234	1235	125	1	24	5	135	123	23	45	235	014	01235	02345				
QC	THIN	EN	Q	W	E	R	T	Y	U	I	O	P	— -	® ©	Insert Space	Insert Ldrs.			
	013		12	13	14	134	245	35	124	1234	25	(P) 025	4	035	(P) 0124				
QR	EM	SHIFT LOCK	A	S	D	F	G	H	J	K	L	& /	RET	[ ]	¼ ¾	TAB			
(P) 03	03	04	1245	15	1345	234	2345	145	34	345	034	0345	(P) 2	1245	(P) 4				
⅓ ⅔	Super Shift	' ,	SHIFT	Z	X	C	V	B	N	M	; ,	: .	½ BLR	SHIFT	DH	% *			
						3													
						SPACE BAR													
						Space Band													

ABBREVIATIONS:

FB - Fraction Bar
VR - Vertical Rule
CNCL WORD - Cancel Word
En (—) - En Dash
En Ldr - En Leader
Insert Ldrs. - Insert Leaders
DH - Discretionary Hyphen

BLR - Base Line Rule
RET - Return
QL - Quad Left
QC - Quad Center
QR - Quad Right

*Em precedent characters are accessed with the 025 Em space and the numeric characters 1 to 0.

UniSetter
MULTILINGUAL ARRANGEMENT No. 1002

*Em Precedent/Upper Case
*Em Precedent Lower Case

	(P) 01345	(P) 0125	(P) 01	(P) 024	(P) 05	(P) 0135	(P) 0123	(P) 023	(P) 045	(P) 0235							
	¡ !	+ ✓	= □	– ÷	• En Leader	© ®	°	†	*	@							
0134	(P) 0134	012	01345	0125	01	024	05	0135	0123	023	045	0235	0245	015	(P) 012345	2	
QL	` ı (Dotless "i")	$ ñ	1 / (Shilling)	2 °	3 a	4 £	5 ´	6 `	7 ^	8 ¨	9 é	0 &	: ;	( )	Ñ •	CNCL WORD	
	0	0234	1235	125	1	24	5	135	123	23	45	235	014	01235	02345		
QC	THIN	EN	Q	W	E	R	T	Y	U	I	O	P	— -	Ç ç	Insert Space	Insert Ldrs.	
	013		12	13	14	134	245	35	124	1234	25	(P) 025	4	035	(P) 0124		
QR	EM	SHIFT LOCK	A	S	D	F	G	H	J	K	L	/ %	RET	¿ ?	¨ ß	TAB	
(P) 03	03	04	1245	15	1345	234	2345	145	34	345	034	0345	(P) 2	1245		(P) 4	
¢ «	Super Shift	' ;	SHIFT	Z	X	C	V	B	N	M	, ;	. :	^ BLR	SHIFT	DH	´ »	
									3								
									SPACE BAR								
									Space Band								

ABBREVIATIONS:
CNCL WORD - Cancel Word
Insert Ldrs. - Insert Leaders
DH - Discretionary Hyphen
QC - Quad Center

BLR - Base Line Rule
RET - Return
QL - Quad Left
QR - Quad Right

***Em precedent characters are accessed with the 025 Em space and the numeric characters 1 to 0.**

UniSetter

TTS (News) ARRANGEMENT No. 1011

*Em Precedent/Upper Case
*Em Precedent Lower Case

| | | |

UniSetter

CANADIAN PRESS WIRE ARRANGEMENT

*Em Precedent/Upper Case
*Em Precedent Lower Case

				(P) 01345	(P) 0125	(P) 01	(P) 024	(P) 05	(P) 0135	(P) 0123	(P) 023	(P) 045	(P) 0235																						
				★ ☆	′ {	° }	® VR	© @	□ ×	=	÷	′	″																						
0134	(P) 0134	012		01345	0125	01	024	05	0135	0123	023	045	0235	0245	015	(P) 012345	2																		
QL	[ ]	! $		⅛ 1	¼ 2	⅜ 3	½ 4	⅝ 5	¾ 6	⅞ 7	— 8	£ 9	? 0	: ;	( )	En - Em •	CNCL WORD																		
QC	THIN	EN		Q	W	E	R	T	Y	U	I	O	P	+ -	EN LDR	Insert Space	Insert Ldrs.																		
	0	0234	1235	125	1	24	5	135	123	23	45	235	014	01235	02345																				
QR	EM	SHIFT LOCK		A	S	D	F	G	H	J	K	L	EM Space	RET	EM LDR	⅔ /	TAB																		
	013		12	13	14	134	245	35	124	1234	25	(P) 025	4	035	(P) 0124																				
(P) 03	03	04	1245	15	1345	234	2345	145	34	345	034	0345	(P) 2	1245	(P) 4																				
⅓ #	Super Shift	' ,	SHIFT	Z	X	C	V	B	N	M	' ,	: .	¢ BLR	SHIFT	DH	% *																			

INDEX

Add Line Space (Repeat Line Space), 100-101.
Add Thin, 14.
Automatic Baseline Rule, 92-95.
Automatic Character Compensation, 32.
Automatic Leaders, 90-91.
Automatic Letterspacing, 30.
Automatic Line Ending, 30.

Back One Point, 86-87.
Baseline Rule, Automatic, 92-95.
Bell, 14.
Busy, 32.

Cancel Line, 50-51.
Cancel Word, 50-51.
Centered Lines, 64-65.
Compensation, Set, 88-89.
Cut, Indent, 142.

Define Space Band Maximum, 60-61.
Define Space Band Minimum, 58-59.
Discretionary Hyphenation, 56-57.

Elevate, 10.
Em Leader, 12.
Em Precedence Codes, 14, 16-17, 165.
Em Space (Bits 013), 12.
Em Space (Bits 025), 12.
Em Space, 74-75.
End Line, 96-99.
En Leader, 12.
En Space, 12, 76-77.

Film Counter, 28.
Film Feed, 28.
Film Strip, 18.
  Installing, 22-23.
Flashable Character Codes, 164-165.
Flash Mode/No Flash, 112-115.
Flash Only, 116-119.
Flush Left Lines, 62-63.
Flush Right Lines, 66-67.
Font Compartment, 18.
Font Drum Power Switch, 30.
Formats, 144-159.
  Call, 146.
  Controller, 146.
  Chaining, 147.
  Delete, 146.
  Over-run, 147.
  What is a Format?, 144.
  Why Formats, 144-145.
  Writing a Format, 148-159.

Half Point/One Point, Line Space, 102-103.
Half Point/One Point, Reverse, 108-109.
Hyphenation
  Discretionary, 56-57.
  On, 30.

Indent Cut, 142.
Indent On, 143.
Indent Paragraph, 140-142.
  Both Margins, 142.
  Hanging, 140.
  Hanging with Insert Rule, 141.
  Second Line, 141.

Input Card, 20.
Insert Space, 72-73.
Installing Film Strips, 22.

Justified Lines, 52-53.

Keyboard Layouts, 168-172.

Leaders, Automatic, 90-91.
Leading, Forward Line Space, 104-105.
Leading, Set (Line Space), 46-47.
Leading, Set (Preset Line Space), 68-69.
Leading, Reverse, 110-111.
Letterspacing and/or/Hyphenation, 54-55.
Line Space, Add (Repeat Line Space), 100-101.
Line Space, Forward, 104-105.
Line Space, (Leading), 38-39.
Line Space, One Point/Half Point, 102-103.
Line Space, One Point/Half Point Reverse, 108-109.
Line Space, Reverse, 106-107.
Lower Magazine (Paper Feed), 10.
Lower Rail, 10.

Measure, Set (Line Length), 40-41.
Minimum/Maximum Spacing, 32.
Mixed Quadding, 70-71.
Multiple Columns (Tabbing), 120-127.
Multiple Function Commands, 48-49.

No Film, 32.

One Point/Half Point Line Space, 102-103.
One Point/Half Point Reverse Line Space 108-109.
One Point Space, 82-83.
Only Flash, 116-119.
Over Maximum Line Length, 32.
Overset, 32.

Paragraph, Indent, 140-142.
  Both Margins, 142.
  Hanging, 140.
  Hanging with Insert Rule, 141.
  Second Line, 141.
Photographic Material, 26.
  Loading Photographic Material, 26-27.
Point Size (Type Size), 44-45, 167.

Quad Center, 8.
Quadding, Mixed, 70-71.
Quad Left, 14, 62-63.

Ragged Left, 143.
Ragged Right, 143.
Repeat Line Space, (Add Line Space), 100-101.
Reset, 30.
Return, 8.
Reverse Leading, 110-111.
Reverse Line Space, 106-107.
Reverse Line Space, One Point/Half Point, 108-109.
Rubout, 10, 50.
Rule, Baseline (Automatic), 92-95.

Set Compensation, 88-89.
Shift, 8.
Space Band, 8.
  Define Maximum, 60-61.
  Define Minimum, 58-59.

Space Codes,
  Back One Point, 86-87.
  Em Space, 74-75.
  En Space, 76-77.
  One Point Space, 82-83.
  Subtract Unit, 84-85.
  Thin Space, 78-79.
  Unit, 80-81.
Space Only, (No Flash), 112-113.
Space Only Off, (Restore Flash Mode), 112-115.
Speed Modes, 24.
Speed, UniSetter, 24.
Start, 28.
Stop, 30.
Subtract Unit, 84-85.
Super Shift Functions, 162-163.

Tabbing, Automatic, 128-139.
Tabbing, Multiple Columns, 120-127.
Tape Feed, 12.
Tape Input Control, 28.
  External Input, 28.
  Six Level, 28.
  Six Level Test, 28.
  Test Program, 28.
  Wire Service, 28.
Thin Space, 12, 78-79.
Type Face, (Type Style), 42-43, 167.

Unit Space, 80-81.
Unshift, 8.
Upper Magazine, (Quad Right), 10.
Upper Rail, 10.

Width Cards, 20.
Wire Service, 160-161.
  Rejustification, 161.
  Standard Wire Service, 160.
  Stock, 160.
  Text Operation, 160.

Zero Width, (Only Flash), 116-119.

Part No. 36151-001
Printed in U.S.A.